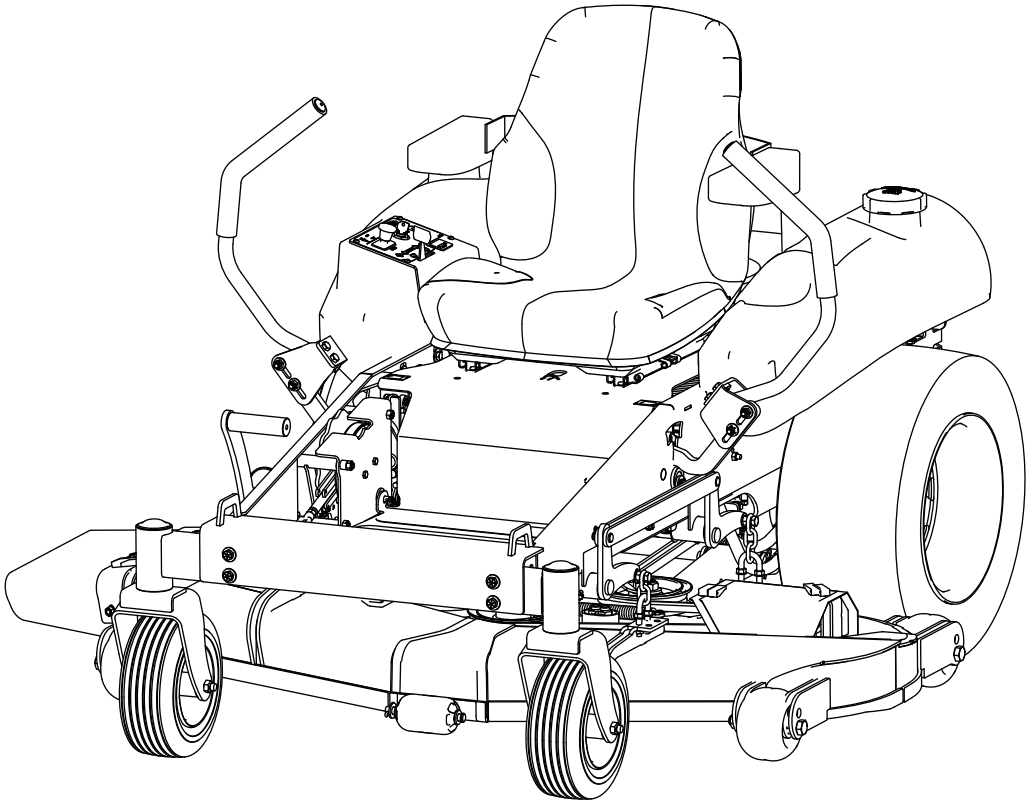
ProZoom

Owner/Operator Manual
Manuel Du Propriétaire/Utilisateur

Models

991800 - ProZoom 2352S

991802 - ProZoom 1948S



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INTRODUCTION

NON-ENGLISH MANUALS

Manuals in languages other than English may be obtained from your Dealer. Visit your dealer or www.ariens.com for a list of languages available for your equipment. Manuals printed in languages other than English are also available as a free download on our web site:

http://www.ariens.com

MANUALES EN IDIOMAS DIFERENTES DEL INGLES

Puede obtener manuales en idiomas diferentes del inglés en su distribuidor. Visite a su distribuidor o vaya a www.ariens.com para obtener una lista de idiomas disponibles para su equipo.También puede imprimir manuales en idiomas diferentes del inglés descargándolos gratuitamente de nuestra página Web:

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MANUELS NON ANGLAIS

Des manuels dans différentes langues sont disponibles chez votre revendeur. Rendez-vous chez votre revendeur ou allez sur le site www.ariens.com pour consulter la liste des langues disponibles pour votre équipement. Les manuels imprimés dans des langues différentes de l'anglais sont également disponibles en téléchargement gratuit sur notre site Web:

http://www.ariens.com

THE MANUAL

Before operation of unit, carefully and completely read your manuals. The contents will provide you with an understanding of safety instructions and controls during normal operation and maintenance.

All reference to left, right, front, or rear are given from operator sitting in the operation position and facing the direction of forward travel.

SERVICE AND REPLACEMENT PARTS

When ordering publications, replacement parts, or making service inquiries, know the Model and Serial numbers of your unit and engine.

Numbers are located on the product registration form in the literature package. They are printed on a serial number label, located on the frame of your unit (Figure 1).

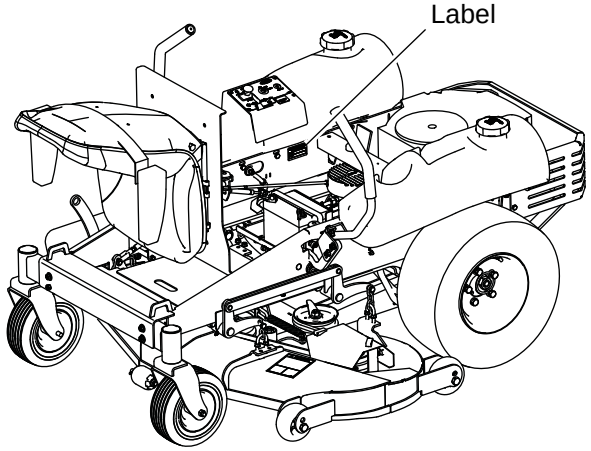


Figure 1

• Record Unit Model and Serial numbers here.

• Record Engine Model and Serial numbers here.

PRODUCT REGISTRATION

The Ariens dealer must register the product at the time of purchase. Registering the product will help the company process warranty claims or contact you with the latest service information. All claims meeting requirements during the limited warranty period will be honored, whether or not the product registration card is returned. Keep a proof of purchase if you do not register your unit.

Customer Note: If the Dealer does not register your product, please fill out, sign and return the product registration card to Ariens or go to www.ariens.com on the internet.

UNAUTHORIZED REPLACEMENT PARTS

Use only Ariens replacement parts. The replacement of any part on this equipment with anything other than an Ariens authorized replacement part may adversely affect the performance, durability, and safety of this unit and may void the warranty. Ariens disclaims liability for any claims or damages, whether regarding warranty, property damage, personal injury or death arising out of the use of unauthorized replacement parts.

NOTE: To locate your nearest Ariens Dealer, go to www.ariens.com.

DISCLAIMER

Ariens reserves the right to discontinue, change, and improve its products at any time without public notice or obligation to the purchaser. The descriptions and specifications contained in this manual were in effect at printing. Equipment described within this manual may be optional. Some illustrations may not be applicable to your unit.

DEALER DELIVERY

Dealer should:

1. Test brakes after unit is assembled to be sure adjustment has not been disturbed in shipment (see *Parking Brakes* on page 13). Brake is properly adjusted at factory.
2. Check the safety interlock system to make sure that it is functioning properly. With operator on seat, unit must not start unless steering levers are in neutral (N) and Power Takeoff (PTO) is disengaged (Off). Engine must stop if operator leaves seat when steering levers are in any drive position or PTO is engaged (On). See *Safety Interlock System* on page 12.
3. Fill out Original Purchaser Registration Card and return the card to Ariens.
4. Explain Limited Warranty Policy.
5. Explain recommended lubrication and maintenance. Advise customer on adjustments. Instruct customer on controls and operation of unit. Discuss and emphasize the Safety Precautions. Give customer Owner/Operator, Parts, and Engine Manuals. Advise customer to thoroughly read and understand them.

SAFETY

WARNING: This cutting machine is capable of amputating hands and feet and throwing objects. Failure to observe the safety instructions in the manuals and on decals could result in serious injury or death.

Slopes are a major factor related to loss-of-control and tip-over accidents. Operation on all slopes requires extra caution.

Tragic accidents can occur if the operator is not alert to the presence of children. Never assume that children will remain where you last saw them.

Gasoline is extremely flammable and the vapors are explosive, handle with care.

Disengage attachment, stop unit and engine, remove key, engage parking brake, and allow moving parts to stop before leaving operator's position.

OL1253

SAFETY ALERT SYMBOL

These are safety alert symbols. They mean:

•**ATTENTION**!

•**PERSONAL SAFETY IS INVOLVED!**

When you see this symbol:

OL3900

•**BECOME ALERT!**

•**OBEY THE MESSAGE!**

SIGNAL WORDS

The safety alert symbols above and signal words below are used on decals and in this manual.

Read and understand all safety messages.

DANGER: IMMINENTLY HAZARDOUS SITUATION! If not avoided, WILL RESULT in death or serious injury.

WARNING: POTENTIALLY HAZARDOUS SITUATION! If not avoided, COULD RESULT in death or serious injury.

CAUTION: POTENTIALLY HAZARDOUS SITUATION! If not avoided, MAY RESULT in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTATIONS

NOTE: General reference information for proper operation and maintenance practices.

IMPORTANT: Specific procedures or information required to prevent damage to unit or attachment.

PRACTICES AND LAWS

Practice usual and customary safe working precautions, for the benefit of yourself and others. Understand and follow all safety messages. Be alert to unsafe conditions and the possibility of minor, moderate, or serious injury or death. Learn applicable rules and laws in your area, including those that may restrict the age of the operator.

REQUIRED OPERATOR TRAINING

If unit is to be used by someone other than original purchaser (loaned, rented or sold), ALWAYS provide this manual and any needed safety training before operation.

SAFETY DECALS AND LOCATIONS

ALWAYS replace missing or damaged Safety Decals. Refer to Figure 2 for Safety Decal locations.

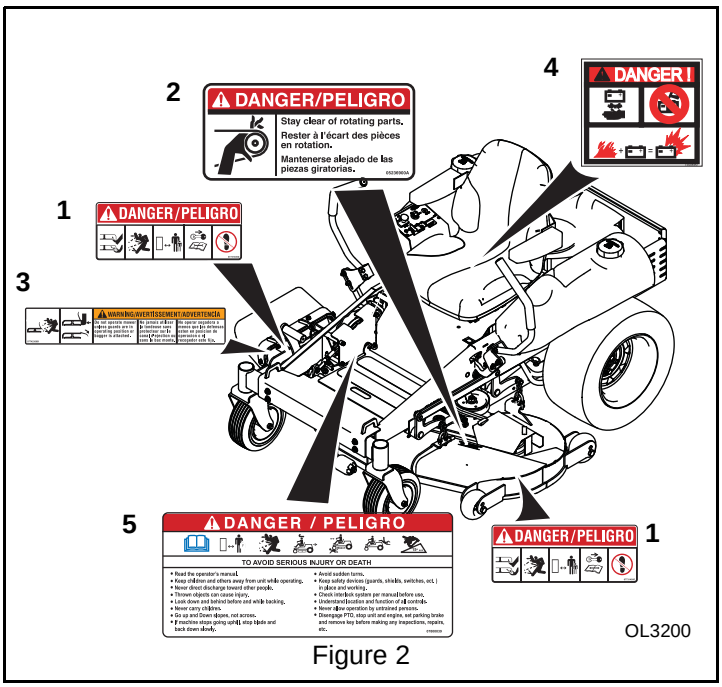


Figure 2

1. Danger!

OL1809 — Always keep feet and hands away from rotating parts.

OL1810 — Always stand clear of discharge area. Do not direct discharge toward other people.

OL18111 — Keep people away from unit while operating.

OL1812 — Shut off engine, remove key, and read manual before you adjust or repair unit.

OL1813 — NO STEP! Always keep feet away from rotating parts.

2. Danger!

OL1816 — Avoid injury - Stay clear of rotating parts.

3. Warning!

OL1814 — Always stand clear of discharge area.

OL1815 — Do not operate mower unless bagger is attached or guards are in operating position.

4. Danger!

OL4450 — Poisonous battery fluid contains sulfuric acid and its contact with skin, eyes or clothing can cause severe chemical burns.

OL4450 — Maintenance-Free Battery. Do not add water or electrolyte.

OL4460 — NO flames, NO sparks, NO smoking near battery. Explosive Gases from battery can cause death or serious injury.

5. Danger! To Avoid Serious Injury or Death

OL1801 — Read the operator's manual.

OL1802 — Keep children and others away from unit while operating.

OL1803 — Never direct discharge toward other people. Thrown objects can cause injury.

OL1804 — Look down and behind before and while backing.

OL1805 — Never carry children.

OL1806

OL1808 — Go up and down slopes, not across.
DO NOT operate on slopes over 15°.

- If machine stops going uphill, stop blade and back down slowly.

- Avoid sudden turns.
- Keep safety devices (guards, shields, switches, etc.) in place and working.
- Check interlock system per manual before use.
- Understand location and function of all controls.
- Never allow operation by untrained persons.
- Disengage PTO, stop unit and engine, set parking brake and remove key before making any inspections, repairs, etc.

SAFETY RULES

Training

Read the Operator's Manual and other training material. If the operator(s) or mechanic(s) cannot read English, it is the owner's responsibility to explain this material to them.

Become familiar with the safe operation of the equipment, operator controls, and safety signs.

All operators and mechanics should be trained. The owner is responsible for training the users.

Never let children or untrained people operate or service the equipment. Local regulations may restrict the age of the operator.

The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people or property.

Preparation

Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job. Only use accessories and attachments approved by the manufacturer.

Wear appropriate clothing including hard hat, safety glasses and ear protection. Long hair, loose clothing or jewelry may become tangled in moving parts.

Inspect the area where the equipment is to be used and remove all objects such as rocks, toys and wire, which can be thrown by the machine.

Use extra care when handling gasoline and other fuels. They are flammable and vapors are explosive.

a. Use only an approved container.
b. Never remove gas cap or add fuel with engine running. Allow engine to cool before refueling. Do not smoke.
c. Never refuel or drain the machine indoors.

Check that operator's presence controls, safety switches and shields are attached and functioning properly. Do not operate unless they are functioning properly.

Operation

Never run an engine in an enclosed area.

Only operate in good light, keeping away from holes and hidden hazards.

Be sure all drives are in neutral and parking brake is engaged before starting the engine. Only start engine from the operator's position.

Slow down and use extra care on hillsides. Be sure to travel in the recommended direction on hillsides. Turf conditions can affect the machine's stability. Use caution while operating near drop-offs.

Slow down and use caution when making turns and when changing directions on slopes.

Never raise deck with the blades running.

Never operate with the PTO shield, or other guards not securely in place. Be sure all interlocks are attached, adjusted properly, and functioning properly.

Never operate with the discharge shield raised, removed or altered, unless using a grass catcher.

Do not change the engine governor setting or over speed the engine.

Stop on level ground, lower implements, disengage drives, engage parking brake, shut off engine before leaving the operator's position for any reason including emptying the catchers or unclogging the chute.

Stop equipment and inspect blades after striking objects or if an abnormal vibration occurs. Make necessary repairs before resuming operations.

Keep hands and feet away from the cutting units.

Look behind and down before backing up to be sure of a clear path.

Never carry passengers and keep pets and bystanders away.

Slow down and use caution when crossing roads and sidewalks.

Stop blades if not mowing.

Be aware of the mower discharge direction and do not point it at anyone.

Do not operate the mower under the influence of alcohol or drugs.

Use care when loading or unloading the machine into a trailer or truck.

Use care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

MAINTENANCE AND STORAGE

Disengage drives, lower implement, set parking brake, stop engine and remove key or disconnect spark plug wire. Wait for all movement to stop before adjusting, cleaning or repairing.

Clean grass and debris from cutting units, drives, mufflers, and engine to help prevent fires. Clean up oil or fuel spillage.

Let engine cool before storing and do not store near flame.

Do not store fuel near flames or drain indoors.

Park the machine on level ground. Never allow untrained personnel to service machine.

Use jack stands to support components when required.

Carefully release pressure from components with stored energy.

WARNING: HYDRAULIC FLUID can result in severe burns**.** Fluid in hydraulic system can penetrate skin and result in serious injury or death.

Be sure to stop the engine before doing any work on hydraulic parts.

Keep body and hands away from pin holes or nozzles which expel hydraulic fluid when under pressure. Use paper or cardboard, not hands, to search for leaks.

Ensure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to system.

FOREIGN FLUID INJECTED INTO BODY can result in gangrene. Fluid must be surgically removed within a few hours by a doctor familiar with this form of injury.

Disconnect battery or remove spark plug wire before making any repairs. Disconnect the negative terminal first and the positive last. Reconnect positive first and negative last.

Use care when checking blades. Wrap the blade(s) or wear gloves, and use caution when servicing them. Only replace blades. Never straighten or weld them.

Keep hands and feet away from moving parts. If possible, do not make adjustments with the engine running.

Charge batteries in an open well-ventilated area, away from spark and flames. Unplug charger before connecting or disconnecting from battery. Wear protective clothing and use insulated tools.

Keep all parts in good working condition and all hardware tightened. Replace all worn or damaged decals.

MOWER SAFETY

This product is capable of amputating hands and feet and throwing objects. Always follow all safety instructions to avoid serious injury or death.

Read and understand all precautions found in the operator's manual before operating the Ariens mower. This equipment must only be operated by those who have been trained in its safe use.

In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, a machine should never be operated without the safety shields installed. Keep all shields in place. If shield removal becomes necessary for repairs, replace shield prior to machine operation.

WARNING: DO NOT remove or obscure DANGER, WARNING, CAUTION or Instruction Decals. Replace any decals that are not readable or are missing. Replacement decals are available from your dealer. The location of these Safety Decals is illustrated in figure 2.

GENERAL SAFETY RULES

This manual must be made available to the operator of the Ariens mower at all times.

Read this manual carefully and learn how to use the machine correctly. Become familiar with all machine controls and how to stop the machine and the implements or attachments quickly.

Beware of bystanders, particularly children!

Always look around to make sure that it is safe to start the engine or move the power unit. This is particularly important with higher noise levels as you may not hear people shouting.

Keep Off

Only allow the operator on the machine. Do not carry passengers. This mower is designed for one (1) person, the driver.

Riders on the machine could be struck by foreign objects or thrown off the machine causing serious injury.

Riders obstruct the operator's view which results in the machine being operated in a manner which is unsafe.

DO NOT carry passengers anywhere on the power unit or on any implement or attachment connected to, or installed on the power unit.

Before Operation

Pay special attention to the warning, caution and danger labels on the machine.

Do not use starting fluid. Use of starting fluid could damage engine components.

Check the brakes and other mechanical parts for correct adjustment and wear. Replace worn or damaged parts promptly. Check the torque on all hardware regularly.

Do not wear headphones or listen to music while operating the deck. Operating the machinery safely requires your undivided attention.

Keep the power unit and attachments clean. Accumulation of dirt, grease, or grass can lead to fires or personal injury.

Do not modify the power unit or any of its attachments.

Unauthorized modification of the machinery may affect its functionality, which could lead to personal injury.

Do not wear loose-fitting clothing which could get caught in moving parts. Do not operate this machine while wearing shorts. Always be sure to wear adequate protective clothing. Wearing safety glasses and safety shoes is advisable.

Operator hearing protection is recommended. Extended exposure to loud noise could lead to hearing loss.

A fire extinguisher and first aid box should be carried with the power unit or be kept readily available at all times.

Keep emergency numbers for immediate access.

During Operation

Do not bypass the starting circuit by shorting across the terminals of the starter motor to start the engine. This may cause the power unit to move suddenly.

Periodically check the starting circuit to make sure all system components operate correctly.

If the starting system does not work, consult your Ariens Dealer immediately.

Operate the mower only in daylight or when the area to be mowed is lit well by artificial light.

Never remove the discharge shield from the mower because the discharge shield directs material down toward the turf. If the shield is damaged, be sure to replace it immediately.

Never try to clear the discharge area or the mower blades unless you have moved the steering control levers to the park position, put the PTO switch in the "Off" position, switched the ignition key to the "Off" position, removed the ignition key and disconnected the negative battery cable.

Do not operate the power unit in a confined or non-ventilated area. Carbon monoxide gas is colorless, odorless, and can be fatal.

Do not turn sharply when driving at high speeds.

Park the mower on a firm level surface with the steering control levers in the park position.

When backing, be sure to turn around and look to the rear. Do not mow in reverse unless it is absolutely necessary.

When working in groups, use caution and watch out for others.

Always be aware of mower discharge direction. Make sure it does not point at anyone.

Be sure the engine and rotating blades have stopped before putting hands or feet near the blade.

Disengage the blade drive when transporting the machine across drives, sidewalks, etc. Never raise the mower deck while the blades are turning.

Do not put hands or feet under or into the mower when it is running.

Do not touch the engine or muffler when the engine is running or immediately after the engine has stopped. These areas may be hot enough to cause serious burns.

Do not drive the machine on streets or highways. Watch for traffic when crossing streets or while mowing close to roads.

Always inspect the mower for damage after striking a foreign object. Always repair or replace damaged parts before restarting the mower deck.

Do not operate the power unit without the mower deck attached.

Make sure the machine and all attachments come to a complete stop before dismounting.

Before dismounting, disengage the PTO, lower all attachments, place the steering control levers in the park position, turn off the engine, and remove the key.

Operating On Slopes

Avoid starting or stopping when going up or down a slope. Keep all movements on a slope gradual and slow. Do not make sudden changes in speed or direction.

If tires lose traction while on a slope, disengage the mower blades and back slowly and gradually down the slope.

Do not turn on slopes unless necessary, and then turn slowly and gradually downhill if possible.

Use extra caution when mowing on slopes. If you are unable to back up on the slope, or if you do not feel comfortable on it, then do not mow it. Do not operate the machine on slopes that exceed 15°.

Mow across slopes, not up and down, to avoid machine tip-over. Do not mow slopes or hills that are too steep for safe operation.

Do not try to stabilize the machine by putting your foot on the ground.

ROLL OVER PROTECTIVE STRUCTURE (ROPS)

Do not weld, drill or alter the ROPS. Damaged ROPS must not be straightened or used. If damage does occur, consult your Dealer and replace all damaged parts.

If the ROPS is lowered or removed from the power unit for any reason, it must be erected and/or refitted immediately. Original bolts or equivalent replacements must be used and tightened to the correct torque.

Do not attach chain, ropes, or cables to the ROPS for pulling purposes as this will cause the mower to tip backwards.

Ariens does not recommend the use of the mower with the ROPS removed.

If you have a foldable ROPS, it can be folded down for mower storage. It must be pinned in the upright position prior to machine operation.

SEAT BELT USAGE

With the ROPS installed, it is imperative that the seat belt be installed, used, and correctly adjusted at all times. Replace damaged seat belts immediately.

Do not use a seat belt if operating with ROPS folded down or removed.

MAINTENANCE

Only qualified, trained adults should service the machine.

Before maintenance is performed, make sure the mower is parked on a firm flat surface. Remove the key to prevent an accidental start up.

Never attempt to disconnect any safety devices.

Frequently check for worn or deteriorating components that could create a hazard.

Use only genuine Ariens replacement parts. Substitute parts could cause product malfunction or possible injury to the operator or bystanders.

If it is necessary to have the engine running while making maintenance adjustments, keep hands, feet, and clothing away from all moving parts.

When making adjustments while the engine is running such as carburetor and motion control linkage adjustments, stand to either side of the tractor and mower and keep clear of moving or rotating components.

Allow the Ariens mower time to cool before touching the engine, muffler, or any other part which may be hot.

Always stop the power unit, turn off PTO and allow unit to cool before refueling.

Keep the engine free of grass, leaves, grease and other debris which could catch fire.

Keep all hardware tight to ensure the machine is in a safe working condition. Check the blade mounting nuts often to make sure they are tight.

Perform only maintenance instructions described in this manual. Unauthorized maintenance operations or machine modifications may result in unsafe operating conditions.

For engine maintenance, follow the engine manufacturer's recommendations as noted in the engine manual.

Fuel System

Handle gasoline with care. Gasoline is extremely flammable and its vapors can be explosive.

Use an approved fuel container.

Never add fuel to the mower while the engine is running or while it is hot. Allow the engine to cool for several minutes before adding fuel.

Keep matches, cigarettes, cigars, pipes, open flames, or sparks away from the fuel tank and fuel container.

Always fill the fuel tanks outside using caution. Fill the tank until the fuel is about one inch from the top of the tank. Use a funnel or spout to prevent spilling. When refueling at a gas pump, always ensure the nozzle contacts the neck of the tank while filling.

Replace the machine and container caps and clean up any spilled fuel before starting the engine.

Keep the mower and all fuel containers in a safe locked place to keep children from tampering with them.

Fuel system components rely upon clean fuel for lubrication and optimum performance. Extreme care must be taken to prevent ingress of dirt and moisture to prevent damage.

Use only nonmetal portable fuel containers approved by the Underwriter's Laboratory (U.L.) or the American Society for Testing and Materials (ASTM). If using a funnel, make sure it is plastic.

When practical, do not fuel the equipment on truck beds or on trailers. Remove them and fuel on the ground. If this is not possible, use a portable nonmetal fuel container to fill the equipment.

Hydraulic System

Make sure all hydraulic fluid, hoses, and lines are in good condition and all lines and fittings are tight before applying pressure to the hydraulic system.

Check hydraulic connections frequently. They can leak as a result of damage, as a result of vibration or because they have worked loose.

Relieve all pressures before disconnecting hoses or lines. Escaping oil under pressure can cause serious injury.

Escaping hydraulic fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before applying pressure to the system, make sure all connections are tightened, and lines, pipes and hoses are not damaged. Fluid escaping from pinholes may be invisible. Do not use your hands to search for suspected leaks. Instead, use a piece of cardboard and wear protective eye wear such as safety goggles.

If injured by escaping fluid, see a medical doctor at once. Serious infection or reaction will result if proper medical treatment is not administered immediately. This fluid can produce gangrene or severe allergic reaction.

Battery Maintenance

Use caution when charging the battery or performing maintenance on the battery and electrical system.

Use a voltmeter to check the state of the charge.

If using a battery charger make sure it is unplugged before connecting or disconnecting the cables to the battery.

Batteries contain sulfuric acid electrolyte. Always wear protective clothing and eye protection when servicing.

In case of electrolyte contact, rinse area with plenty of water and seek medical attention.

Make sure the battery is charged in a well-ventilated location so hydrogen gases that are produced while it is charging can dissipate. Halt charging if battery exceeds 52°C (125°F).

Keep sparks, flames, and smoking material away from the battery at all times. To avoid sparks, use care when removing battery cables from their posts.

Disconnect the battery's ground cable before working on or near any electrical parts.

Tire Maintenance

CAUTION: Separation of a tire and rim can cause an explosion that could cause serious injury or death.

Check the tires for low pressure, cuts, bubbles, damaged rims, or missing lug bolts and nuts.

Always use a clip-on chuck with an extension long enough to allow you to stand on one side of the wheel while inflating the tires. Do not stand directly in front of the tire while inflating.

Never weld or heat a tire and wheel assembly. The heat can cause the air inside of the tire to expand and result in a tire explosion. Welding also can structurally weaken or deform the wheel.

Always ensure the tires are inflated to the correct pressure. Do not inflate the tires above the recommended pressure.

Make sure all hardware, especially the wheel nuts and bolts have been tightened to the correct torque.

When removing a tire from the power unit, it is necessary to support it with blocks or stands, not a hydraulic jack.

Do not attempt to service a tire unless you have the proper equipment and experience to perform the job. If you are not qualified to make the repairs, take the unit to your Ariens dealer or a qualified repair service.

When seating tire beads on the rims, never exceed 2, 4 bar (35 p.s.i.) or the maximum inflation specified on your tires. Inflation beyond this maximum pressure may break the bead, or even the rim, with dangerous explosive force.

Replacement Parts

Where replacement parts are necessary for periodic maintenance and servicing, genuine Ariens replacements must be used.

Ariens does not claim responsibility for installation of unapproved parts and/or accessories or damages as a result of their use.

TRANSPORTING

Disengage power to the attachments when in transport or not in use.

Do not tow this machine. Use a truck or trailer to transport on public roads.

Do not use this machine on public roads.

ASSEMBLY

WARNING: AVOID INJURY! Read and understand entire *Safety* Section before proceeding.

UNPACK UNIT

Remove all packing materials and hardware and literature packages. Discard J hook used with strapping as it is not needed for mower operation.

SETUP INSTRUCTIONS

Ariens mowers are shipped partially assembled. After uncrating the power unit and mower deck, initial setup is required.

IMPORTANT: During the unpacking of the crate all goods should be matched against the packing list and all shortages or damages should be noted and reported to the carrier immediately.

Steering Controls

1. The steering control levers have been lowered for shipping. Remove the loose 3/8-16 x 1.50" bolts from the handles and reinstall them in the location shown. Adjust the handles to fit your comfort area.

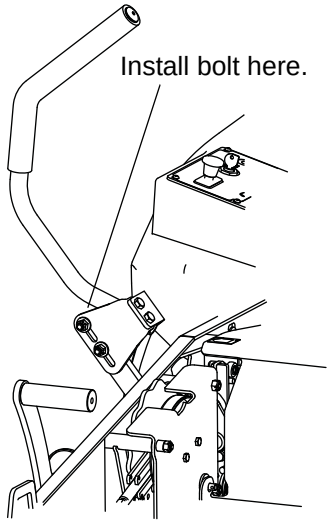


Figure 3

Seat Setup

1. Remove the 5/16" flat washers and lock nuts from the four studs protruding from the bottom of the seat.
2. Route the seat switch connector through the opening the in the seat plate and plug the connector into the seat switch.
3. Install the seat on the seat plate with the 5/16" flat washers and lock nuts removed in step 1. Secure the p-clip on the wiring harness to the left front seat stud so the harness gets routed as shown in Figure 4.

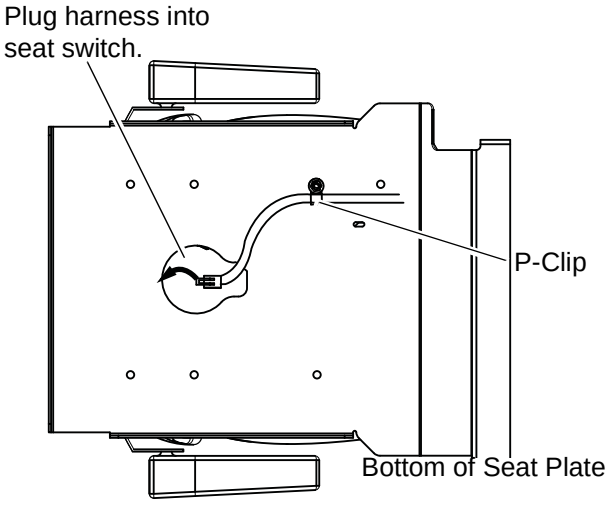


Figure 4

Battery

The battery supplied with the mower is sealed, it will not be necessary to activate it.

1. Connect the red positive cable to the positive (+) side of battery. Use 1/4 x 5/8" bolt and 1/4" locknut. Cover terminal with rubber boot.
2. Connect the black negative cable to Negative (–) side of battery. Use 1/4 x 5/8" bolt and 1/4" locknut.

If the engine does not turn over by turning the ignition switch, it may be necessary to charge the battery, see *Charging the Battery* on page 22.

Deck

1. Remove knob from discharge shield.
2. Remove discharge assembly from Transport position.
3. Install discharge assembly in Operating position.
4. Reinstall knob in discharge assembly and tighten.
5. Check deck level and pitch. See *LEVELING THE DECK* on page 24.

Tires

See *SPECIFICATIONS* on page 34.

CAUTION: Avoid injury! Explosive separation of tire and rim parts is possible when they are serviced incorrectly:

- Do not attempt to mount a tire without the proper equipment and experience to perform the job.
- Do not inflate the tires above the recommended pressure.
- Do not weld or heat a wheel and tire assembly. Heat can cause an increase in air pressure resulting in an explosion. Welding can structurally weaken or deform the wheel.
- Do not stand in front or over the tire assembly when inflating. Use a clip-on chuck and extension hose long enough to allow you to stand to one side.

Hardware

Check for loose hardware.

Check Safety Interlock System

Check to see that the interlock system operates correctly. (See *Check Safety Interlock System* on page 10).

WARNING: FAILURE OF INTERLOCK together with improper operation can result in severe personal injury.

Lubrication

Lubricate all fittings per maintenance label under seat and check hydraulic oil level. See *Lubrication and Maintenance* on page 19.

Hydraulic Oil Service

The power unit is shipped with hydraulic oil in the system. If the tracking is erratic, purge the system. If the oil level is below the edge of the baffle in the oil reservoir, fill with SAE 20W-50 motor oil. See *Hydraulic System Maintenance* on page 20.

Engine

Engine has been filled with a break in oil. Change oil and filter after first 8 hours of use. See *Lubrication and Maintenance* on page 19.

Check Function of All Controls

Ensure unit runs and performs properly.

WARNING: FAILURE OF CONTROLS could result in death or serious injury.

CONTROLS AND FEATURES

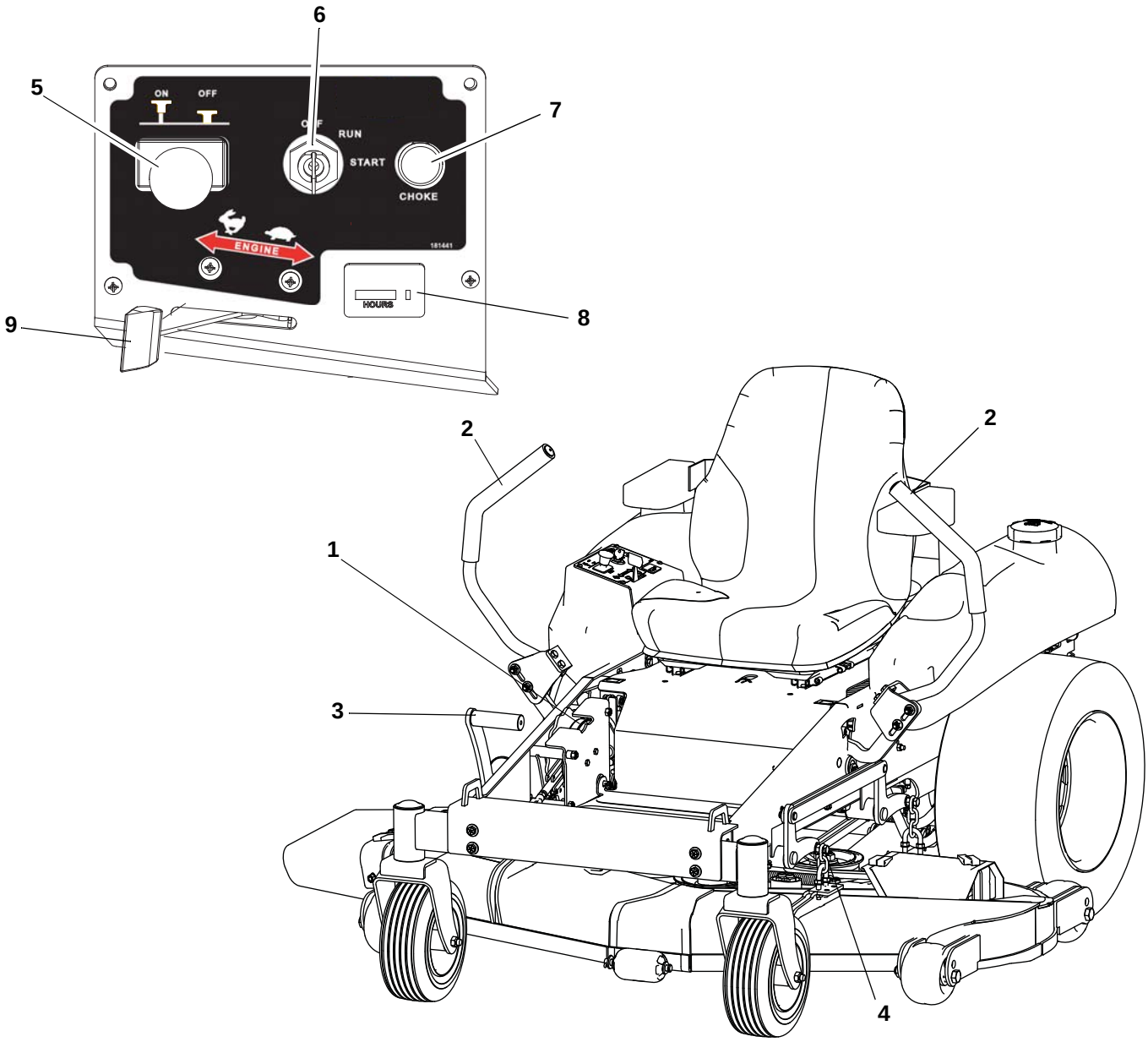


Figure 5 OE3241

1. Deck Height Adjustment Dial
2. Steering Control Levers
3. Deck Lift Lever
4. Deck Level Adjust
5. PTO Switch
6. Ignition Switch
7. Choke Control
8. Hour Meter
9. Throttle

WARNING: AVOID INJURY! Read and understand entire *Safety* Section before proceeding.

CONTROLS AND FEATURES

See figure 5 on page 11 for Controls and Features locations.

Safety Interlock System

WARNING: Safety interlock system failure and improper operation of unit can result in death or serious injury. Test this system each time the unit is operated. If this system does not function as described, do not operate unit repairs are made.

Perform the following tests to ensure the safety interlock system is working properly. If the unit does not perform as stated, contact your Dealer for repairs.

1. Try to start the power unit when the operator is in the seat, the mower PTO is off, and the left hand steering control lever is not in the park position. Try to start the power unit after switching the RH arm out of the park position and putting the LH steering control lever into the park position. Try starting the power unit after taking both levers out of the park position. The starter must not crank in any of these instances.
2. Try to start the power unit when the operator is in the seat, the mower PTO is on, and the steering control levers are in the park position. The starter must not crank in this situation.
3. Try to start the power unit when the operator is not in the seat and the steering control levers are in the park position. The starter must not crank in this situation.

Checking the Engine Shut-Off Circuits

Check the engine shut-off circuits daily.

1. Run engine at 1/3 throttle, engage the mower PTO and lift off of the seat. The engine should stop within 3 seconds.
2. Run engine at 1/3 throttle, engage the mower PTO, move a steering control lever out of the neutral lock and lift off of the seat. The engine should again stop within 3 seconds. Repeat for the opposite steering control lever.

NOTE: If the machine does not pass this test, DO NOT OPERATE. Take it to your Ariens Dealer.

3. Move the steering lever rearward and release the steering lever. This steering lever should return to a position where the steering lever can be swung outward and lock in the neutral outward position.

Steering Control Levers

The steering levers control the speed and direction of the unit. In addition, they will stop the unit.

After starting the power unit, pull the steering control levers back together out of the lock position and into the neutral position.

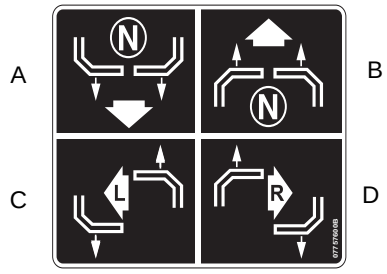


Figure 6

A. For reverse travel, pull both steering control levers backward.
B. For straight forward travel, push both steering control levers forward.
C. To turn left, pull the left back or push the right steering control lever forward or a combination of both.
D. To turn right, pull the left back or push the left steering control lever forward or a combination of both.

CAUTION: Use caution when making turns. Slow the machine down to a manageable speed before making sharp turns. This mower can spin very rapidly when pushing forward on one lever and pulling back on the other.

NOTE: Aggressive turning can scuff or damage lawns. ALWAYS keep both wheels rotating when making sharp turns. DO NOT make turns with inside wheel completely stopped. To obtain minimum turning radius, slowly reverse inside wheel while moving the outside wheel slowly forward.

CONTROL PANEL

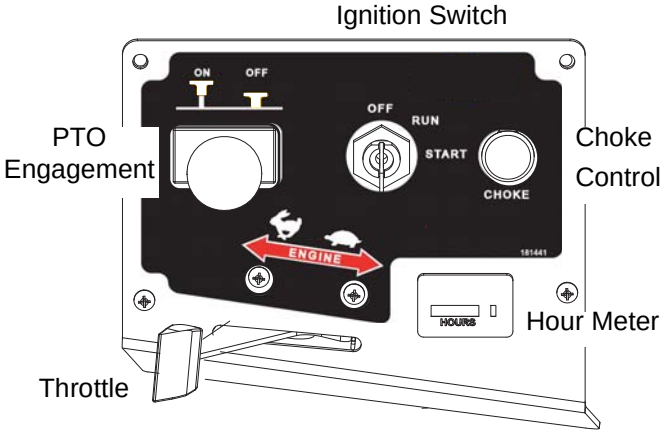


Figure 7 OL5020

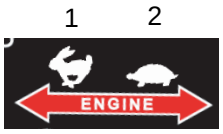
Ignition Switch

Operate the ignition switch with the removable key. The switch has three positions: Off (1), Run (2) and Start (3). To start the engine, turn the key to Start, and then release to Run. To stop the engine, turn the key to Off.

NOTE: DO NOT operate starter more than 10 seconds at a time. If the engine does not start after 10 seconds allow the starter to rest 30 seconds before trying again. If engine will not start, see *Troubleshooting* on page 30 or refer to Engine Manual.

Choke Control

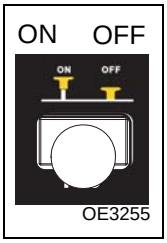
Pull the choke lever out to start a cold engine. Push the choke lever in once the engine starts and warms.



OE3250

Throttle Lever

The throttle lever changes the engine speed. Move the throttle lever forward to Fast (1) to increase engine speed. Move the lever rearward to Slow (2) to decrease engine speed.



OE3255

Power Take Off (PTO) Switch

Power take off (PTO) switch engages and disengages the mower blades.

Pull the power take off (PTO) switch to "On" position to engage mower blades.

Push the power take off (PTO) switch to "Off" position to disengage mower blades.

NOTE: The engine will not start unless the steering control levers are in the neutral position, the PTO switch is in the “Off” position and parking brake is set.

Parking Brakes

OE3385

Place the steering control levers in the neutral position and push them out into the slots to engage the parking brake for each side.

Move the steering control levers in towards the center to release the parking brakes.

Deck Lift Lever

Deck lift lever raises and lowers mower deck for mowing or transport.

Transport:

Push deck lift lever all the way forward until lift lock engages.

To release the lock, push the pedal forward, pull back on the transport lock handle, and slowly release the lift lever.

DANGER: Before raising the deck to the transport position, insure the PTO is disengaged and the steering control levers are in the park position.

Cutting Height

To change the cutting height, raise the mower deck into the transport position. Turn the Deck Height Adjust Dial until the desired cutting height is shown and then lower the deck to the cutting position.

The mower can be adjusted to mow from 1.5" – 5.5" (38 – 140 mm) height of cut. Grass mowing height should be determined by encountered conditions and personal preferences.

The following recommendations are provided as a guide for cutting height selection.

Lawns = 1.5 – 3” (38 – 76 mm)

Field Cutting = 3 – 5.5” (76-140 mm)

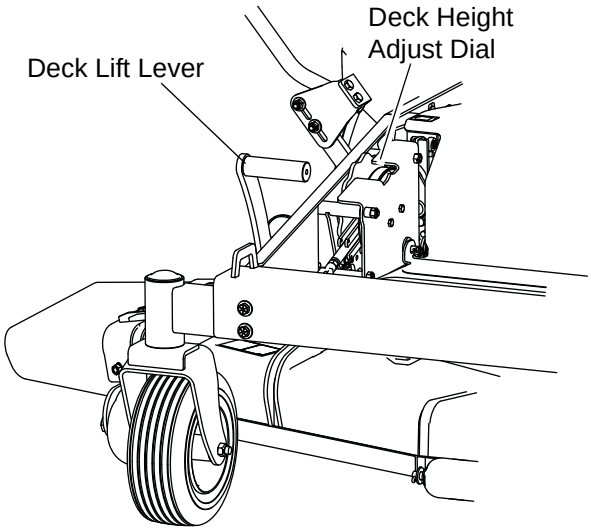


Figure 8

Seat Adjustments

WARNING: Make all seat adjustments with unit stationary, parking brake on and engine shut off.

The seat is designed for one person. Do not allow any passengers to ride on this machine.

To adjust seat forward or backward:

1. While seated, pull seat adjustment lever outward and slide seat into desired position.
2. Release lever and slide seat forward or back to lock seat into position.

To adjust the cushion spring for the weight of the operator:

1. Turn the knob clockwise for a heavier operator.
2. Turn the know counterclockwise for a lighter operator.

Hour Meter

Records total number of hours the engine has been in operation.

IMPORTANT: Keep a record of Hour Meter readings for recommended Lubrication and Maintenance intervals.

NOTE: For accurate readings be sure Ignition Switch is OFF when unit is not in operation.

OPERATION

Break-in Period

- Operation of the mower within the first fifty hours can be a major factor in determining the performance and life of the engine and power unit.
- The engine may be operated at full RPM, but excessive load should be avoided. If engine begins to slow, due to excessive load, operate at a slower ground speed while maintaining the engine speed.
- Check engine, pumps, and motors frequently during break-in period. Watch for evidence of leakage of fluids. Replenish levels as required and repair any leaks that may have formed.
- Locate any nuts, bolts or screws that may have loosened and tighten them as necessary. This is especially true of the wheel retaining nuts.
- During break-in period observe control arm and parking brake adjustments. Parking brake adjustments may be necessary after the first few hours of operation.
- Keep area around the fuel tank filler clean and make sure the gasoline is of correct octane and free of contamination.
- Initial oil and oil filter change is after the first 8 hours of use and every 100 hours after.

CAUTION: Proper maintenance practices are required for safe operation. (See *Maintenance Schedule* on page 17).

Fuel

WARNING: AVOID INJURY.

Read and understand entire *Safety* section before proceeding.

Add fuel to the Fuel Tank as needed. See your engine manual for correct type and grade of fuel.

To add fuel to the fuel tank:

1. Place unit in an open, well-ventilated area.
2. Stop engine and allow it to cool.
3. Clean the fuel cap and area around the fuel cap to prevent dirt from entering the tank. Remove the cap from the fuel tank.
4. Fill the fuel tank to within 1 in. (25mm) below bottom of filler neck. Do not overfill.
5. Replace fuel cap and tighten.
6. Clean up any spilled fuel.

Mounting and Dismounting Safely

DO NOT step on either side of the mower deck when mounting or dismounting the power unit. Step over the deck when mounting or dismounting.

PRE-START INSPECTION

CAUTION: Make sure all hardware is tight, all safety devices are in place and all adjustments are made correctly.

Safe operation is the responsibility of the operator. The operator MUST be familiar with the mower and power unit controls, how they work, and all safety precautions BEFORE starting operation.

IMPORTANT: Inspect the mowing blade bolts daily, or whenever a blade has been removed. Torque is 110 – 130 lbf-ft. (150 – 177 N•m).

- Make sure all safety shields are in place and secured properly.
- Make sure the operator is instructed on correct and safe operation of the power unit and related attachments and implements.
- Check engine and hydraulic reservoir oil and fill as necessary.
- Check the pump belt and drive belt tension and adjust as necessary.
- Ensure air intake screens are clear of debris to provide maximum engine cooling.
- Inspect tires, tire pressure and wheel bolt torque. Look for external signs of leakage and correct before operating the mower. Check steering control levers for looseness and correct position.
- Check for adequate fuel supply. It is recommended that the fuel tank be filled following each day's use to reduce condensation and provide a full tank for next use.

STARTING AND SHUT OFF

CAUTION: Read entire Owner/Operator Manual and Engine Manual first. DO NOT attempt to start the engine at this time.

CAUTION: Always start and operate the engine in a well-ventilated area. If in an enclosed area, vent the exhaust outside.

To start the engine:

1. Sit properly in the seat, make sure the steering controls are in the park position and the PTO is off.
2. If the engine is cold, move the choke to the On position. If the engine is warm, do not use choke.
3. Move the throttle to the 3/4 fast position. See Engine manual for detailed instructions.
4. Put the key in the ignition switch and turn it to the Start position. As soon as the engine starts, release the key.
5. Move the choke control to the Off position. Adjust the choke to keep the engine running smoothly.

6. Allow the engine to warm for about five minutes before operating the unit.

NOTE: Warming time will vary depending on the ambient temperature. For temperatures below 32° F (0° C), allow ten or more minutes for the unit to warm.

7. Use the throttle to increase or decrease engine speed. Set the throttle to the fast position to cut grass.

To stop the engine:

1. Bring the steering levers to the neutral position and disengage the PTO.
2. Move the throttle to the Slow position.
3. Turn the ignition key to the Off position.

Cold Weather Starting

NOTE: When starting in cold weather (below -5° C (23° F)), do not run the starter more than 10 seconds at a time. If the engine does not start after 10 seconds allow the starter to rest 30 seconds before trying again.

Stopping The Engine

Move the control levers to the park position, idle the engine a few moments and turn the ignition switch to the "Off" position. Remove the key.

CAUTION: ALWAYS remove the ignition key when the unit is not in use.

MOWING

WARNING: To avoid damage to the mower, re-torque all fastening hardware, including blade and spindle pulley retaining nuts, after the first hour of mowing operation.

Operate the unit only when seated in the operator's position.

1. Start the engine. Let the engine idle until it is running smoothly.
2. Bring the steering control levers to the neutral position.
3. Set the throttle to the 3/4 fast position.
4. Turn on the PTO to engage the mower.

IMPORTANT: Never engage the PTO when the mower is plugged with grass or other material. This may damage the clutch.

5. Move the throttle to the fast position.
6. Move the steering levers forward to obtain a slow ground speed.
7. To disengage the mower, move the PTO switch to the OFF position.
8. When you know how to operate the unit, select a speed appropriate to your mowing conditions.

Anti-Scalp Wheels

1. Raise the mower by pushing down on the deck lift lever and lock into transport position.
2. Place the steering control levers in the park position.
3. Set the anti-scalp adjustment to desired height of cut.
4. To adjust the anti-scalp rollers, remove the 5/8-11 x 4.25" bolts and reinstall the bolts in the appropriate hole for the desired height of cut (see figure 9).
5. Depress the deck lift lever and pull back on the deck transport lock lever and lower the deck into the cut position.

NOTE: The anti-scalp wheels should always be at least 1/4–1/2" (6mm - 13mm) off the ground. They are designed to keep the deck from scalping the ground in uneven terrain, they are not to contact the ground all of the time.

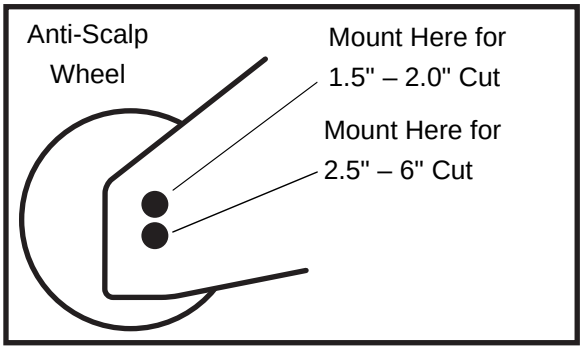


Figure 9 OM5030

Side-Discharge Mowers

DANGER: Without the discharge shield or a complete grass collector installed, you and others are exposed to rotating mower blades and thrown debris. Contact with the mower blades or flying debris could cause severe injury or death.

The discharge deflector routes material down toward the ground. Never remove the discharge shield or operate the mower with a damaged discharge deflector.

Never put your hands or feet under the mower.

Do not try to clear the mower discharge area or mower blades without first turning the mower PTO to off, turning the ignition key to off, removing the key and disconnecting the battery cable.

The mower has a pinned discharge shield that discharges the clippings out of the side of the deck and onto the ground.

Uneven Terrain

WARNING: To avoid the loss of control and to prevent overturning the mower, always across slopes, never up and down.

Pass diagonally through sharp dips. Avoid sharp drop offs completely to prevent the mower from becoming hung up.

Keep the power unit steering control levers forward when going downhill.

Pre-plan mowing over uneven terrain so the grass will be dry, minimizing wheel slippage and spinning, which will damage the turf.

Before mowing, check the area to determine the best procedure. Consider the grass type and height, and the type of uneven terrain on which the mowing is to take place.

Avoid sudden starts and stops while traveling up or down incline, and slow the ground speed while turning.

Grass Discharge

WARNING: NEVER operate the mower with the discharge shield in the raised position.

The mower deck has been designed to provide maximum air flow for an even discharge of grass clippings. When mowing tall, or lush grasses, select a lower mower ground speed, or reduce the width of cut, for the best discharge efficiency.

For the best lawn appearance, do not mow when the grass is wet or heavy with dew. Wet grass could plug the discharge area of the mower, create an unnatural load on the blades and spindles, and damage the mower deck belt. Wet grass will also leave unsightly clumps on the lawn.

If the mower deck becomes clogged, back the unit out of the uncut grass. If the mower will not clear itself, raise the deck, shut off the engine, set the brake, remove the ignition key and clean the bottom of the deck.

In medium and heavy cutting conditions, mow so the discharged clippings will be AWAY from the uncut grass. In light cutting, discharged clippings can be directed onto the uncut grass, allowing them to be recut finer.

Tips For Efficient Mowing

CAUTION: Clear the area of people, pets, and all visible debris before beginning mowing operations.

Mowing blades should be checked regularly and kept sharp to ensure the best lawn appearance.

Best results occur normally when the grass is maintained at a height of 2–3 inches (50–80mm). It is best to cut the grass often and not too short. To keep a healthy green lawn, do not cut more than 1/3 of the overall grass blade height.

Mower engine speed while mowing should be at the maximum rated RPM. This will ensure proper blade speed for effective cutting and discharge of grass clippings.

Travel speed greatly affects mowing performance. Always use a lower ground speed for slower mowing, rather than lowering the engine RPM.

Mow often. Do not wait for the grass to get too tall. Short grass clippings will disperse better and deteriorate faster.

Mowing areas with tall grass or weeds may require cutting at maximum height of cut. After mowing once, recut the entire area with the mower reset to the desired final height of cut.

PARKING

To park the unit:

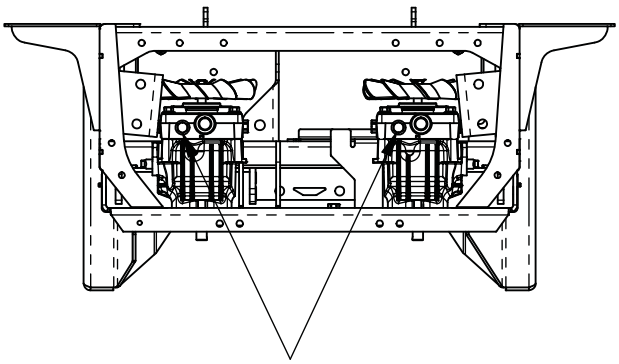
1. Bring the steering levers to neutral and then push them out to the park position.
2. Turn off the PTO, stop the engine, lower the deck to the ground and remove the ignition key.

IMPORTANT: When parking on any slope, be sure to chock the wheels on the downhill side to prevent the unit from sliding.

Moving the Unit with the Engine Off

If the mower engine stalls and will not restart, the unit can be pushed or towed for short distances with the pump bypass valves open. Do not exceed 5 m.p.h. (8 kph) when towing.

IMPORTANT: The bypass valves must be opened two full turns (maximum) before the unit is moved (see figure 10). Be sure the bypass valves are closed before running the mower again. Failure to fully close the bypass valves before operation could result in hydraulic system damage.



Bypass Valves

Figure 10

TOWING

WARNING: Exercise care when turning the mower while towing. The mower will turn more sharply than the towed object.

IMPORTANT: Attempting to tow more than 200 pounds (90.7 kg) with the Ariens mower will lead to premature parts failure and void the warranty.

The mower is designed for towing in light duty applications only. Do not attempt to tow more than 200 lbs. (90.7 kg). Tongue weight is not to exceed 30 lbs (13.61 kg).

LOADING THE MOWER

WARNING: Exercise extreme caution when loading and unloading the unit from a ramp.

Use only a single, full width ramp. If individual ramps are necessary, use several to simulate a single full width ramp. Use enough ramps to create an unbroken ramp surface wider than the unit.

Never exceed a 15 degree angle between the ramps and the truck or trailer when loading the mower.

Avoid sudden acceleration and deceleration of the unit when loading and unloading the unit to avoid the mower from tipping backward.

The loading ramp should be long enough that the angles between the truck or trailer do not exceed 15 degrees. A steeper angle may cause the mower deck components to get hung up when moving the mower from ramp to truck or trailer. If loading on or near a slope, position the truck or trailer on the down side of the slope and the ramps should extend up the slope. This will minimize the ramp angle. The trailer or truck should be parked as level as possible to facilitate smooth loading of the mower.

TRANSPORTING THE MOWER

WARNING: When transporting the mower, make sure the steering control levers are in the park position, the wheels have been blocked, the machine has been securely fastened by cables, chains or ropes, and the trailer has been secured to the towing vehicle with safety chains.

Use a heavy duty trailer or truck to transport the mower. Make sure the trailer or truck has all of the necessary lighting and markings as required by law.

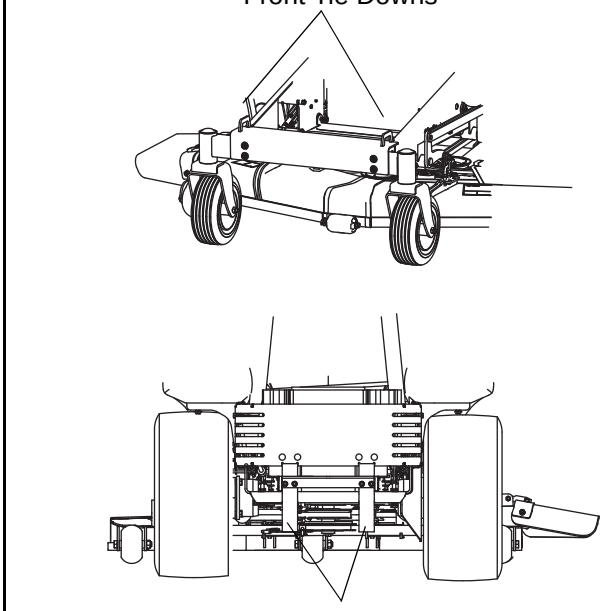


Figure 11

MAINTENANCE SCHEDULE

WARNING: AVOID INJURY. Read and understand entire *Safety* section before proceeding.

Ariens Dealers will provide any service, parts or adjustments which may be required to keep your unit operating at peak efficiency. Should engine require service, contact an Ariens or an authorized engine manufacturer's service center.

MAINTENANCE SCHEDULE

IMPORTANT: Some working conditions (heavy loads, high ambient temperatures, dusty conditions, or airborne debris) may require more frequent service.

See engine manual for further maintenance and troubleshooting information.

NOTE: To have full access to the engine, the seat must be tipped forward.

Interval	Task	Action
Each Use	Check Safety Interlock System	**WARNING:** Safety interlock system failure and improper operation of unit can result in death or serious injury. Test this system each time the unit is operated. If this system does not function as described, do not operate until repairs are made (see *Safety Interlock System* on page 12).
	All Controls, Switches	Inspect regularly and repair when necessary.
	All Fasteners, hardware	Inspect regularly and tighten when necessary.
	Hoses, fan belt, wiring	Inspect regularly and repair when necessary.
	Engine Oil Level	Check regularly and replenish when necessary (see *Engine Oil Level* on page 19).
	Hydraulic Oil Level	Check regularly and replenish when necessary (see *Hydraulic System Maintenance* on page 20).
	Air Screens	Clean off debris regularly.
	Air Cleaner Unloader Valve	Clean regularly.
	Air Cleaner Elements	Inspect regularly and clean or replace when necessary.
	Fuel Tank Levels	Check regularly and replenish when necessary.
	Fuel Filter	Inspect regularly and replace when necessary.
	Steering Lever Adjustment Balance	Check regularly and adjust when necessary.
	Check Parking Brake	Engage parking brake and engage transmission bypass lever (see *Moving the Unit with the Engine Off* on page 16). Push unit. If unit rolls, contact your Ariens Dealer.
	Clean Unit	Clean engine, battery, seat, mower deck, etc. of all dirt and debris. Do not use solvents, high-pressure sprayer, hard cleaners or abrasives. **NOTE:** Protect painted surfaces with automotive type wax.
	Check Tire Pressure and Conditions	See *SPECIFICATIONS* on page 34 for correct tire pressure.
	Wheel Bolt Torque	Check regularly and tighten when necessary.
	Steering Free-Play	Check regularly and repair when necessary.
	Grass Build Up	Remove after each use.
	Inspect Mower Blades	Check mower blades for wear. Sharpen or replace as needed (see *Blade Maintenance* on page 27).
	Follow Engine Manual Maintenance Schedule	Perform scheduled engine maintenance. Refer to Engine Manual for detailed instructions. **NOTE:** To drain the oil, use the oil drain petcock supplied with unit, not the drain plug that is shown in the Engine Manual.
25 Hours or Every Season	Check Battery	Keep battery and battery terminals clean (see *Cleaning the Battery* on page 22).
	Air Cleaner Elements	Inspect and clear away debris, replace if necessary.
	Lubricate Unit	Apply grease to fitting on each front wheel
50 Hours or Every Season	Check Fasteners	Check mower blade mounting hardware and all other fasteners. Replace fasteners that are missing or damaged. Tighten all nuts and bolts to the correct torque value.
	Grease Fittings	Lubricate as necessary.
100 Hours or Every Season	Hydraulic Oil & Filter	Replace.
	Battery	Check and clean as necessary (see *Battery Maintenance* on page 21).
	Check All Belts	Replace worn or deteriorated belts (see *Belts* on page 28). • Check drive belt. • Check deck belt.
	Inspect Hydraulic Hoses	Inspect regularly and repair when necessary (see *Checking The Hydraulic Hoses* on page 21).
	Clean engine cooling system	Check and clean the cooling fins and inside the engine shrouds to remove grass, chaff or dirt clogging the cooling system and causing overheating.

WARNING: AVOID INJURY. Read and understand entire *Safety* section before proceeding.

SERVICE ACCESS

CAUTION: Shut off the engine before servicing the mower.

Make sure the seat is fully raised and locked before performing any maintenance on the mower.

The seat can come down very quickly once the seat lock lever is released. Lower the seat slowly making sure to pay close attention that everything is clear.

Raise the seat to access the battery and the hydraulic reservoir. Use caution while lifting and make sure the seat is locked in the upright position before beginning service on the mower.

LUBRICATION AND MAINTENANCE

Engine Oil Level

IMPORTANT: Failure to check the engine oil level regularly could lead to serious engine problems if oil is too low.

1. Park the unit on level ground and shut off the engine.
2. Clean the area around the engine dipstick before removing it.
3. Remove the dipstick and wipe it off.
4. Momentarily reinstall the dipstick in the engine (without turning it) and check that the oil level is between the upper and lower limit on the dipstick.
5. Add oil as necessary to achieve required level. DO NOT overfill.
6. Reinstall and tighten the dipstick.
7. Clean any spilled oil.

IMPORTANT: Use only the oil specified for use in the engine manual.

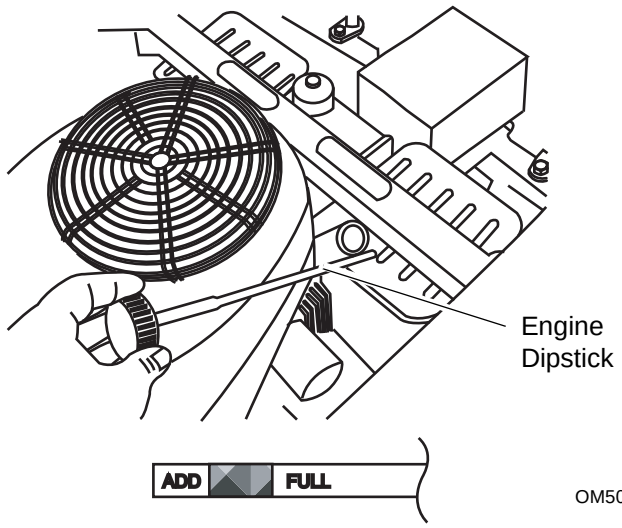


Figure 12

Oil Filter Change

Change the engine oil filter initially after the first 8 hours of use. Change the engine oil filter every 100 hours of operation after the initial change.

1. Start the engine and run it for five minutes to warm the engine oil.
2. Drain the engine oil into a suitable container.

CAUTION: Before removing the oil filter, place a suitable pan under the filter connection.

3. Clean the area around the oil filter to keep dirt and debris from the engine and rotate the oil filter counterclockwise to remove it. Wipe off the surface where the filter mounts.
4. Coat a film of clean engine oil on the seal of the new filter, see figure 13.
5. Install a new filter rotating it clockwise until the seal contacts the mounting surface. Rotate the filter an additional 3/4 of a turn by hand.
6. Reinstall drain plug and tighten.
7. Refill with engine oil as specified.
8. Run the engine for about 3 minutes, stop engine, and check for leaks around filter.

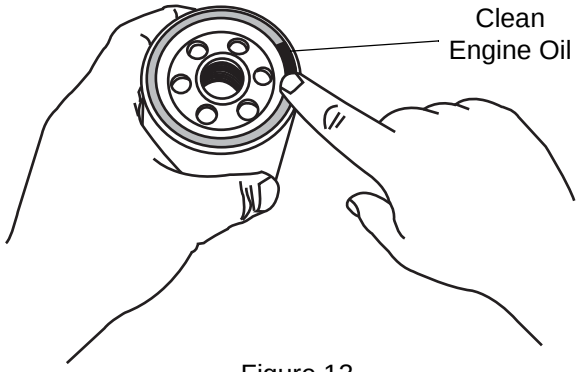


Figure 13

Engine Oil Change

WARNING: Engine oil is a toxic substance. Dispose of used oil properly. Contact your local authorities for approved disposal methods or possible recycling.

Change the engine oil and filter after the first 8 hours of operation. Change the oil each subsequent 100 hours of operation after the initial change.

1. Run the engine to warm the oil.
2. Park the mower on level ground.
3. Stop the engine, put the steering control levers in the park position and remove the key.
4. Remove the oil drain screw, see figure 14, and drain the oil into a suitable container while the engine is still warm.

WARNING: Hot engine oil can cause severe burns. Allow engine oil temperature to drop from hot to warm before attempting to drain and handle the oil.

5. Install the oil drain screw.
6. Remove the dipstick and refill with fresh oil.
7. Check the oil level.

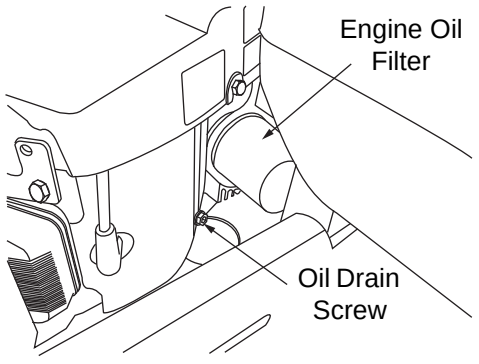


Figure 14 OE3290

HYDRAULIC SYSTEM MAINTENANCE

WARNING: HYDRAULIC FLUID can result in severe burns**.** Fluid in hydraulic system can penetrate skin and result in serious injury or death.

Be sure to stop the engine before doing any work on hydraulic parts.

Keep body and hands away from pin holes or nozzles which expel hydraulic fluid when under pressure. Use paper or cardboard, not hands, to search for leaks.

Ensure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to system.

FOREIGN FLUID INJECTED INTO BODY can result in gangrene. Fluid must be surgically removed within a few hours by a doctor familiar with this form of injury.

CAUTION: Be sure the engine has been stopped, the steering control levers are in the park position, and the key has been removed before changing or checking the hydraulic oil in the mower.

Allow the hydraulic fluid to cool. The oil may be hot and could cause serious burns.

IMPORTANT: Avoid damage to hydraulic components as a result of contamination. Be sure to wipe around the filler neck and cap before removal of the hydraulic oil reservoir cap. Do not open the oil reservoir cap when hot unless it is absolutely necessary.

Check the reservoir daily for the proper fluid level.

The pump and motor units require fluid changes yearly or every 250 hours whichever occurs first. The system filter should be changed initially after the first 50 hours of operation. The fluid and filter must be changed and the system cleaned if the fluid would become contaminated with dirt, water, etc.

NOTE: The integrated pump/motor units are equipped with bypass valves. See *Moving the Unit with the Engine Off* on page 16.

Changing Hydraulic Fluid

CAUTION: Be sure the engine has been stopped, the steering control levers are in the park position, and the key has been removed before changing or checking the hydraulic oil in the mower.

Allow the hydraulic fluid to cool. The oil may be hot and could cause serious burns.

1. Park the machine on a level surface, stop the engine, put the steering control levers in the park position and remove the key.

2. Clean the area around the reservoir filler cap and remove the filler cap from the reservoir.
3. To drain the hydraulic fluid, place a suitable container under the hydraulic filter and remove it.
4. Place a thin coat of hydraulic oil on the gasket on the oil filter. Before reinstalling, make sure mount area is clean of debris.
5. Install the hydraulic oil filter onto the filter adapter.
6. Refill the hydraulic reservoir to the recommended level. Reinstall the oil reservoir filler cap.
7. Clean up any fluid which may have spilled.

Bleeding/Purging the Hydraulic System

IMPORTANT: Air in the hydraulic system is the primary cause of hydraulic pump failures. Following hydraulic system service or repair, the hydraulic system MUST be correctly purged of trapped air before placing the mower back in operation.

1. To bleed the system make sure the oil tank is full, the oil must barely cover the fill baffle inside of the tank.
2. Raise the rear unit tires off the floor and place it on suitable jack stands.
3. Open both pump bypass valves, one on each pump, two full turns maximum.
4. Sitting in the operator's seat, start the engine and run it at idle.
5. Slowly cycle the steering control levers full forward and full reverse for 10 seconds in each direction, 5 or 6 times.

NOTE: The rear tires should rotate, but they'll not be under load.

6. Shut off the engine, check and add hydraulic oil as necessary.
7. Close the bypass valves on both pumps. Do not over tighten.
8. Sitting in the operator's seat, start the engine and run it at idle.
9. Slowly cycle the steering control levers full forward and full reverse, 5 or 6 times.

NOTE: It may be necessary to repeat purging procedures until all air is vented out of the hydraulic system. When the Pump moves forward and reverse at normal speed and the reservoir oil remains at a constant level, purging is complete.

IMPORTANT: The rear tires are now rotating under power. Do not touch or contact them. If they do not rotate after 2-3 cycles, stop immediately. There may still be air in the system. Let the pumps cool and try purging again from Step 1.

10. Shut off the engine, lower the unit back to the floor and check and add hydraulic oil as necessary.

Checking The Hydraulic Hoses

Inspect the hydraulic hoses every 250 hours to ensure they are in good working order.

Check both the hoses and hose clamps to ensure there is no wear or damage. If either is found worn or damaged, repair or replace them at once.

BATTERY MAINTENANCE

Battery

WARNING: AVOID INJURY. Read and understand entire *Safety* section before proceeding.

WARNING: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

Unit comes equipped from the factory with a maintenance-free battery that requires no regular maintenance except cleaning the terminals.

Removing the Battery

WARNING: The battery terminals or metal tools could short against the metal components of the mower causing a spark that could ignite explosive battery gases. When removing the battery from the mower, do not allow the battery terminals to touch any part of the machine. Do not allow metal tools to touch metal parts of the machine while in contact with the battery terminals.

Incorrect battery cable routing could damage the mower or cause a spark that could result in explosive battery gases being ignited.

Always disconnect the black (negative) battery cable before disconnecting the red (positive) battery cable. Always reconnect the red (positive) battery cable first before reconnecting the black (negative) battery cable.

1. Disengage the mower PTO switch, put the steering control levers in the park position, turn the ignition key to "Off" and remove the key.
2. Raise the seat and lock it in the upright position.
3. Disconnect the negative battery cable from the battery terminal.
4. Slide the red boot off of the positive battery terminal and remove the positive battery cable.
5. Slide the rubber strap out from the battery tray. Carefully release the strap and slide the opposite end out of the hooks on the battery tray.
6. Carefully remove the battery. Avoid touching the terminal posts on any metal parts.

Installing the Battery

1. Insert the battery in the tray with the battery posts facing to the left.
2. Install the positive battery cable to the positive post on the battery.
3. Install the negative battery cable to the negative post on the battery.
4. Secure the cables by inserting a 5/16-18 x 5/8" carriage bolt through the battery post and through the battery cable. Secure it with a 5/16-18" whiz locknut.
5. Install the red terminal boot over both the positive post and the positive cable.
6. Secure the battery in place by inserting one end of the hook band into the battery tray and running the other end over the top of the battery into the slot on the opposite end of the battery tray.

Cleaning the Battery

Keep battery and its terminals clean. Inspect every 100 operating hours or monthly for best performance.

1. Remove battery from unit. See *Removing the Battery* on page 21.
2. Clean terminals and battery cable ends with wire brush.
3. Coat terminals with dielectric grease or petroleum jelly.
4. Replace battery. See *Installing the Battery* on page 22.

CHARGING THE BATTERY

Battery Electrolyte First Aid

Follow First Aid directions for contact with battery fluid.

- External Contact: Flush with water.
- Eyes: Flush with water for at least 15 minutes and get medical attention immediately!
- Internal Contact: Drink large quantities of water. Follow with Milk of Magnesia, beaten egg or vegetable oil. Get medical attention immediately!

In case of internal contact, DO NOT induce vomiting!

IMPORTANT: DO NOT fast charge. Charging at a higher rate will damage or destroy battery. ONLY use an automatic charger designed for use with your battery.

ALWAYS follow information provided on battery by battery manufacturer. Contact battery manufacturer for extensive instructions to charge battery.

1. Remove battery from unit. See *Removing the Battery* on page 21.
2. Place battery on bench or other well-ventilated place.
3. Connect positive (+) lead of charger to positive (+) terminal, and negative (–) lead to negative (–) terminal.
4. Charge battery according to charger and battery manufacturer’s instructions.
5. Replace battery. See *Installing the Battery* on page 22.

Jump-Starting

Ariens does not recommend jump-starting your unit. Jump-starting can damage engine and electrical system components. See your engine manual for more detailed information.

Replacing Fuses

IMPORTANT: Avoid damage to the electrical circuit. Use only the same size fuse as was originally installed.

There are two fuses on your Ariens mower. They are located on the frame on the inside. One is close to the front of the fuel tank. The second is located to the rear of the tank. Both are 20 amp fuses.

1. Remove the defective fuse from the socket.
2. Check the metal clip in the fuse window and discard the fuse if it is broken.
3. Install the new fuse in its socket.

CASTERS

SERVICING THE CASTER PIVOT BEARINGS

See Figure 15.

1. Park the unit on a level surface, put the motion control arms in the park position, turn off the engine and remove the key.
2. Raise the front of the power unit and support it with jackstands.
3. Remove the cap (2), the 5/8 hex nut (8), the 5/8 spring lock washer (9), the flat washer (10), the 1.0 x 1.25 wave washer (3), and the front wheel weldment (7).
4. Remove the upper and the lower bearings (4) and seals.
5. Clean and inspect the bearings and pack with clean grease. Replace the bearings if needed.
6. Reinstall the upper and lower bearings.

IMPORTANT: The bearings are a press fit. Press only on the outer race when installing.

7. Reinstall the cap (2), the 5/8 hex nut (8), the 5/8 spring lock washer (9), the flat washer (10), the 1.0 x 1.25 wave washer (3), and the front wheel weldment (7).

NOTE: Do not overtighten the 5/8 hex nut. Tighten the nut only enough to remove any excessive play from the bearings.

8. Apply grease to the grease fitting until grease appears at the top bearing. Reinstall the cap.

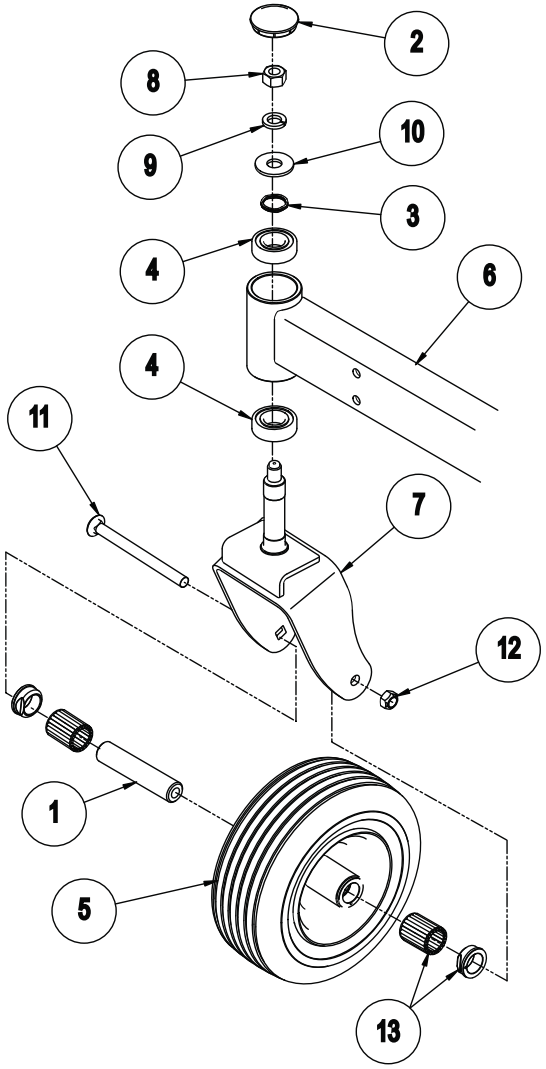


Figure 15

NEUTRAL ADJUSTMENT

See Figure 16.

Before making any adjustments, be sure to check the tire air pressure. Incorrect air pressure can cause the unit to pull to one side. The correct air pressure is 20 p.s.i. in the front wheels and 12 p.s.i. in the rear.

1. Stop the engine and remove the ignition key.
2. Tilt the seat forward.
3. Move the control lever rearward and release the control lever. This control lever should return to a position where the control lever can be swung outward and lock in the neutral outward position.
4. If adjustment is needed, move the control lever back to the inward position and begin to pull rearward. At this beginning rearward motion the clevis pin should begin to contact the end of the slot (1) and start putting pressure on the spring (2).
5. If adjustment is needed, loosen the nut against the yoke (3) and while applying slight rearward pressure on the motion control lever, turn the head of the adjustment bolt (4) in the appropriate direction until the lever is centered.
6. Move the control lever reward and release the control lever. This control lever should return to a position where the control lever can be swung outward and lock in the neutral outward position.

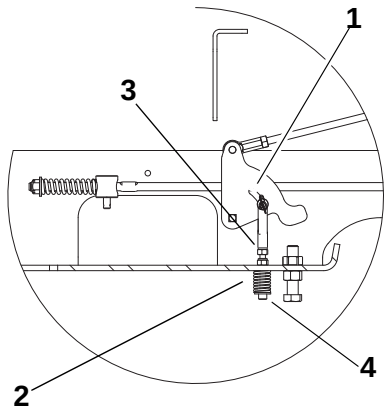


Figure 16 OM5075

STEERING CONTROL LEVER ADJUSTMENT

When the unit is in motion and one steering lever is more forward than the other when driving in a straight line, the steering control levers are out of adjustment. Loosen the hardware on the handlebars and align the pieces. Tighten the hardware to hold the adjustment. See Figure 17.

NOTE: The steering control levers need to be even in both neutral or park.

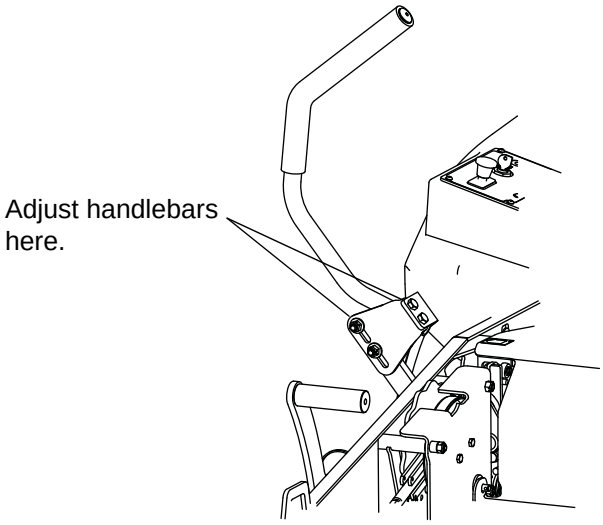


Figure 17 OM5005

LEVELING THE DECK

CAUTION: Stop the engine, put the steering control levers in the park position and remove the key from the ignition before performing any maintenance or repairs on this unit.

1. Set the front tire pressure to 20 p.s.i. and the rear tire pressure to 12 p.s.i.
2. Place the mower on a level surface.
3. Raise the mower deck to the transport lock position and adjust the cut height to 3 inches.
4. Lower the deck back to cut position.
5. Set both of the outside blades to be perpendicular to the mower as shown in figure 18.

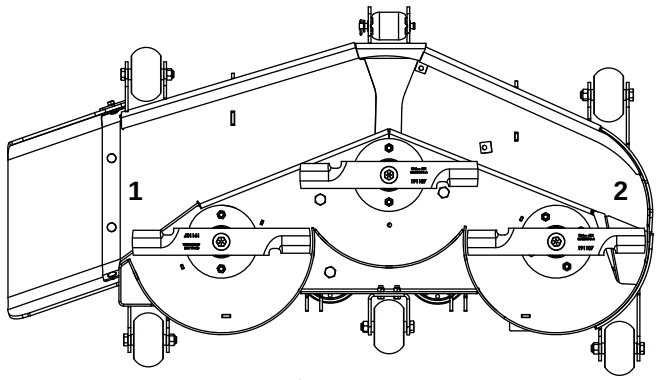


Figure 18 OM5045

6. Measure the height of the blade tips on both 1 and 2 and adjust the front adjustment bolts and the rear U-bolts to ensure the deck is level from left to right.
7. Rotate the mower blades 90° so they are parallel to the mower deck. Use the rear adjustment bolts to adjust the deck so that the rear blade tip is 1/8” higher than the front blade tip on the same blade.

Measure the blade heights to make sure they match what is shown on the height of cut dial. The height is measured as the distance between the ground and the bottom of the blade. If the blade height does not match the dial height, see *Synchronizing Height Of Cut (Figure 20)* below.

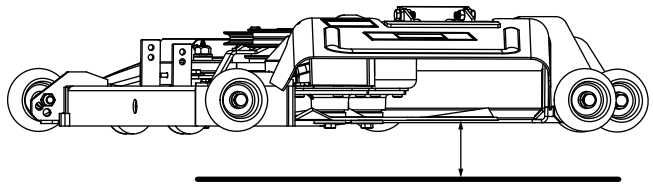


Figure 19 OE3305

Synchronizing Height Of Cut (Figure 20)

CAUTION: Stop the engine, put the steering control levers in the park position and remove the key from the ignition before performing any maintenance or repairs on this unit.

NOTE: Make sure the deck is level before synchronizing the height of cut dial with the deck blade height.

1. Raise the mower deck to the transport position. Take the weight off of the deck lift linkage (1) by inserting wood blocks under each corner of the deck and slowly lowering it until it is resting on the blocks.
2. Loosen the 1/2 jam nut (3) from the 1/2" adjustable yoke (2).
3. Pull the 1/2” clevis spring pin (5) out of the adjustable yoke and disconnect the yoke from the lift linkage (1).

   If the blade height is higher than the height of cut dial, tighten the yoke onto the 1/2-13 x 4.5” bolt (6) which runs through the height of cut index arm weldment (4).

   If the blade height is lower than the height of cut dial, then loosen the yoke on the 1/2-13 x 4.5” bolt (6).

NOTE: Set the height of cut on the front tip of the center blade.

4. Connect the 1/2" adjustable yoke (2) to the lift linkage (1) with the 1/2” clevis spring pin (5).
5. Tighten the 1/2" jam nut (3) back down to lock the setting into position.
6. Raise the deck back to the transport height and remove the blocks from below the deck. Measure the blade height again to ensure it now matches the height on the dial. If not, repeat until the two heights are synchronized.

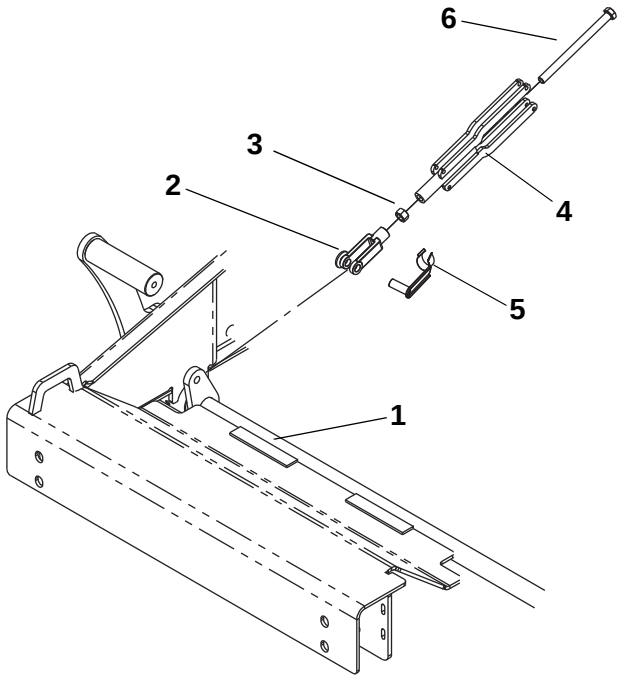


Figure 20

DRIVE ADJUSTMENTS

CAUTION: Stop the engine, put the steering control levers in the park position and remove the key from the ignition before performing any maintenance or repairs on this unit.

Steering and motion controls should be uniform during forward and reverse motions. The steering control levers should always return to neutral when released from the reverse position.

AIR CLEANER SERVICE (FIGURE 21)

CAUTION: Touching hot surfaces can burn skin. The engine and components will be hot after the unit has been running. Allow the engine and components to cool before servicing the unit.

IMPORTANT: To prevent excessive engine wear, do not run the engine without the air cleaner installed.

IMPORTANT: The engine is air cooled and requires a large amount of air intake when running. Reduced air intake can cause overheating. Always keep air intake screen and cooling fins clean. Always keep the covers and screens in place.

NOTE: 19hp Kawasaki engines use only a single-piece filter (5).

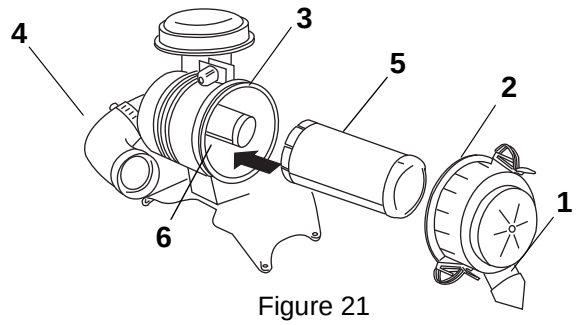


Figure 21

The Unloader Valve (1) will allow for the removal of fine dirt and dust from the canister body (3) without disassembly. While in operation, this valve will suck closed at 1/3 to 1/2 throttle.

- With the engine shut off, squeeze the valve by hand to release dust and debris.
- In very dusty operating conditions, the valve may have to be opened every 2 to 3 hours.

Remove the air cleaner cover and make a general inspection of the entire assembly. If it is unusually dirty or if dirt build-up is easily visible on the inside of the canister body, the entire assembly, including the inlet hose, must be removed from the carburetor and engine.

With the air cleaner removed from the engine, and with the cartridges and gaskets removed, wash the hard parts with cleaning solvent and blow them dry with compressed air. DO NOT wash the air cleaner cartridges.

NOTE: If canister gaskets are broken or missing, BOTH air cleaner elements MUST be replaced.

Inspect and clean the primary air cleaner cartridge (5) assembly every 25 hours. Replace the paper element yearly or every 250 hours, whichever comes first.

The outer cartridge is cleaned by rolling and “tapping” it on a hard surface. If the paper pleats are punctured or torn, the element must be replaced.

Replace the inner cartridge (6) yearly or every 250 hours whichever comes first.

IMPORTANT: DO NOT attempt to clean the secondary element. This filter element must be replaced if it is unusually dirty or damaged.

NOTE: Operation in dusty conditions may require more frequent maintenance of the primary and secondary air cleaner cartridges.

CAUTION: Do not use pressurized air to clean paper element.

FUEL SYSTEM SERVICE

CAUTION: Fuel vapors are explosive and flammable. Do not smoke while handling fuel. Keep fuel away from flames or sparks. Shut off engine before servicing. Always work in a well-ventilated area. Clean up spilled fuel immediately.

Be sure the engine is stopped, the steering control levers are in the park position and the key is removed before making these repairs.

Be sure to inspect the fuel lines periodically. The lines are subject to deterioration and wear. Fuel could leak out onto a running engine and cause a fire.

WARNING: Improper use of solvents can result in fire or explosion. Do not use gasoline or low flash point solvents to clean the fuel filter and/or the fuel pump. Clean only in a well-ventilated area away from sources of sparks or flame, including any appliances with a pilot light.

IMPORTANT: Special care should be taken when the fuel lines are removed for maintenance or repair. Close both ends of the fuel line with a piece of paper or a clean cloth to prevent dust or dirt particles from contaminating the fuel. Even a small amount of dust or dirt can cause premature wear or failure of fuel components.

The fuel line connections are composed of rubber and they will age regardless of the service period. If there is any deterioration of the fuel lines or clamps, replace them.

Check the fuel filter regularly. If it is clogged by debris or contaminated with water, replace it.

The fuel filter cannot be disassembled. If the fuel filter becomes clogged, replace it with a new one.

1. Park the machine safely in a well-ventilated area.
2. Allow to cool.
3. Compress hose with clamp between tank and filter. Use care not to damage or puncture hose.
4. Disconnect the hose clamps (1) from the fuel filter, see figure 22.
5. Slide the fuel line off of both ends of the fuel filter (2).
6. Install the new fuel filter paying close attention to the flow direction (3) noted on the fuel filter.
7. Remove clamp.

The fuel pump can not be disassembled. If the fuel pump fails, replace it with a new one.

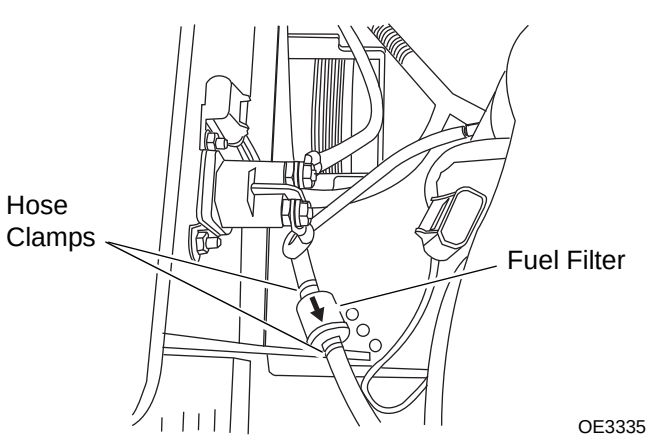


Figure 22

SPARK PLUG SERVICE

WARNING: Hot engine components can cause severe burns. Stop engine and allow it to cool before checking the spark plug.

Clean or replace the spark plug and reset the gap every 100 hours of operation.

1. Disconnect the spark plug wire lead and remove the spark plug.

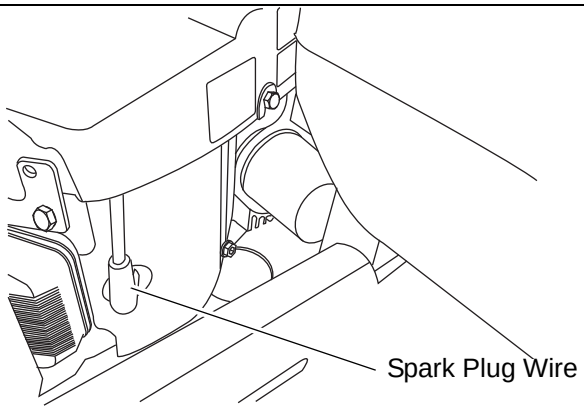
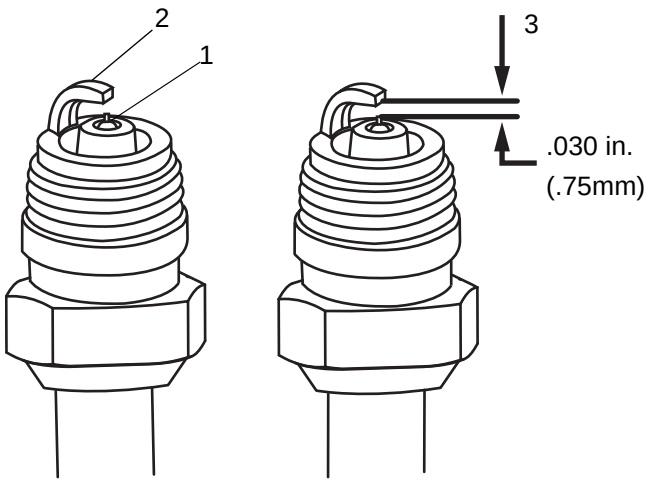


Figure 23

2. Clean the electrodes by scraping with a wire brush to remove carbon deposits.
3. Inspect for cracked porcelain or other wear and damage. If any wear or damage is evident, replace with a new spark plug.
4. Check the spark plug gap and reset if necessary. The correct gap should be .75 mm or .030 inches. To change the gap, bend only the side electrode using a spark plug tool.



1. Center Electrode Insulator
2. Side Electrode
3. Air Gap (Not to Scale)

Figure 24

5. Install and tighten the spark plug to 22 N·m (16 ft. lbs.). Reconnect the spark plug wire lead.

See the engine operator's manual for the recommended spark plug.

COOLING SYSTEM CLEANING

Before each use check to make sure the air intake screen is free from grass and debris and clean if necessary.

Every 100 hours of operation, check and clean the cooling fins and inside the engine shrouds to remove grass, chaff or dirt clogging the cooling system and causing overheating.

CAUTION: Do not run the engine before all cooling system parts are reinstalled to keep the cooling and carburetion as intended.

TIRE AND WHEEL SERVICE

CAUTION: Separation of a tire and rim can cause an explosion that could cause serious injury or death.

Check the tires for low pressure, cuts, bubbles, damaged rims, or missing lug bolts and nuts.

Always use a clip-on chuck with an extension long enough to allow you to stand on one side of the wheel while inflating the tires. Do not stand directly in front of the tire while inflating.

Never weld or heat a tire and wheel assembly. The heat can cause the air inside of the tire to expand and result in a tire explosion. Welding also can structurally weaken or deform the wheel.

Visually inspect the tires before each use. Do not run the tires under- or over-inflated which can cause tire damage. The correct tire pressure for the front tires is 20 p.s.i. (82.7 kpa) and rear wheels is 12 p.s.i. (137.9 kpa) see figure 25.

When reinstalling the wheel after service, be sure to torque the nuts to 75 ft. lbs. (101 N•m). Drive 200-250 yards and then re-torque.

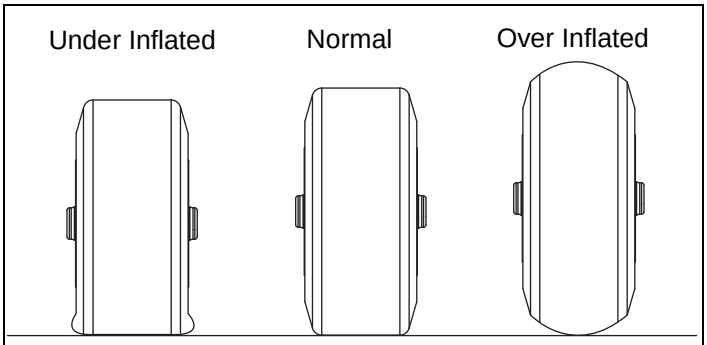


Figure 25

BLADE MAINTENANCE

CAUTION: Before removing the blades, be sure the engine has stopped and the key has been removed. The blades may be sharp. Wear gloves or wrap them in a towel before handling them.

Inspect the blades daily for straightness, sharpness, and balance. Replace the blades if they are cracked, worn, bent or out of balance.

NOTE: Keep blades sharp. Mowing with dull blades will cause poor cut performance. It will also put additional strain on the engine by slowing the mower cutting speed.

CAUTION: Never try to straighten a blade which has been bent or try to weld a blade that is cracked. Always replace with a new blade to ensure safety.

To sharpen the blades, remove the blades by inserting a block of wood and turning the blade bolt counter clockwise, see figure 26.

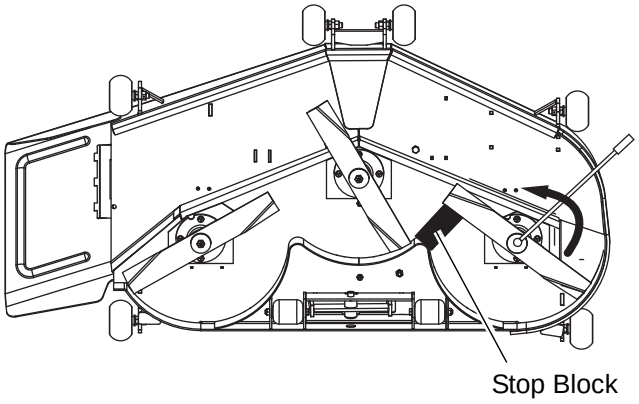


Figure 26 OE3356

CAUTION: Always wear safety eye protection when sharpening the blades.

Be sure to wear a thick glove or wrap the blade in a towel to protect your hands from being cut. Insert the blades in a vise and use a mill file or grinder. File the blade along the original angle until the blade tip is at a 30° angle again.

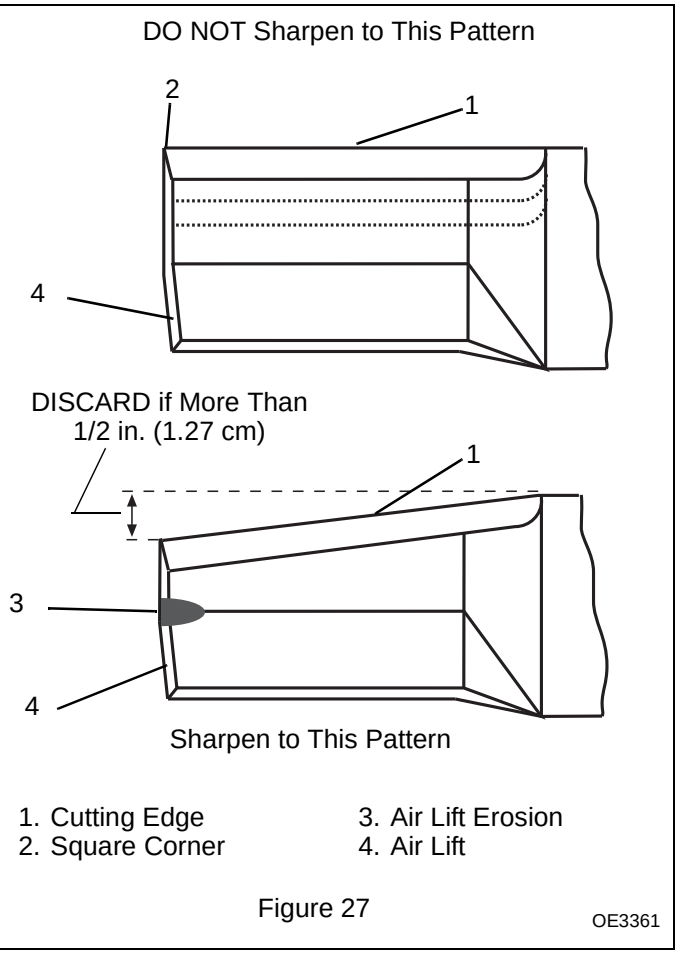


Figure 27

IMPORTANT: When sharpening blades, be sure to grind the same amount on each side. Unbalanced blades will cause excessive vibration and could cause the spindles to wear prematurely.

Check the blade balance by inserting a horizontal rod through the center hole of the blade. The heavy side of the blade will drop down. Sharpen the heavy side of the blade until the blade is balanced, see figure 28.

After sharpening, install the blades back onto the mower deck. Make sure the wings are facing up. Reinstall the blade bolt and lockwasher.

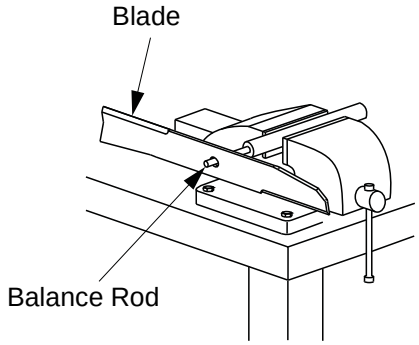


Figure 28

CLEANING GRASS BUILDUP FROM DECK

CAUTION: Before cleaning grass buildup, be sure the engine has stopped and the key has been removed.

Cleaning the underside of the deck regularly will help maintain deck cutting efficiency. Clean the underside of the deck as often as possible.

To gain access to the underside of the deck, depress the deck lift foot pedal and lock it in the transport position. Move the deck cut height adjustment to the highest setting. Raise the front of the power unit and support it with jackstands.

Clean out any grass buildup from under the deck and discharge shield. DO NOT use high pressure washers or sprayers.

BELTS

Inspect the belt pulley grooves and flanges for wear. A new belt, or one in good condition, should not contact the bottom of the pulley groove. Replace the belt when the belt touches the bottom of the groove otherwise the belt will slip excessively.

Always use caution when changing a belt. Never pry a belt on to a pulley.

Always keep oil and grease away from the belts and never use belt dressings.

Belts should be checked regularly, and replaced at approximately 200 hour intervals. Belts should also be replaced any time the belt(s) show evidence of cracking, missing pieces, friction burns from slipping, or other extreme damage. Small cracks or fabric polishing are normal.

Small branches and other similar debris can get onto the top of the deck, into the pulleys, which may cause the belt(s) to break or come off the pulleys. Make sure the area to be mowed is cleared of this debris, and make sure all belt guards are in place, before mowing.

To guarantee long belt life, always use genuine Ariens belts.

Drive Belt Removal and Installation

WARNING: Most service work requires the engine to be shut OFF. To prevent injury while working on the mower, remove the ignition key and disconnect the negative (-) cable from the battery.

1. With the deck in the transport position, raise the floor pan.
2. Loosen the two 3/8-16 nuts on the u-bolt tension arm to relieve tension on the belt, and then remove the belt from the idler pulley.
3. Install a new drive belt, making sure it is routed according to the decal on the bottom of the floor pan, see figure 29.

4. Tighten the two 3/8-16 nuts on the u-bolt tension arm until the extension spring measures 7.7" – 7.8" inside hook to inside hook.
5. Lower the floor pan.

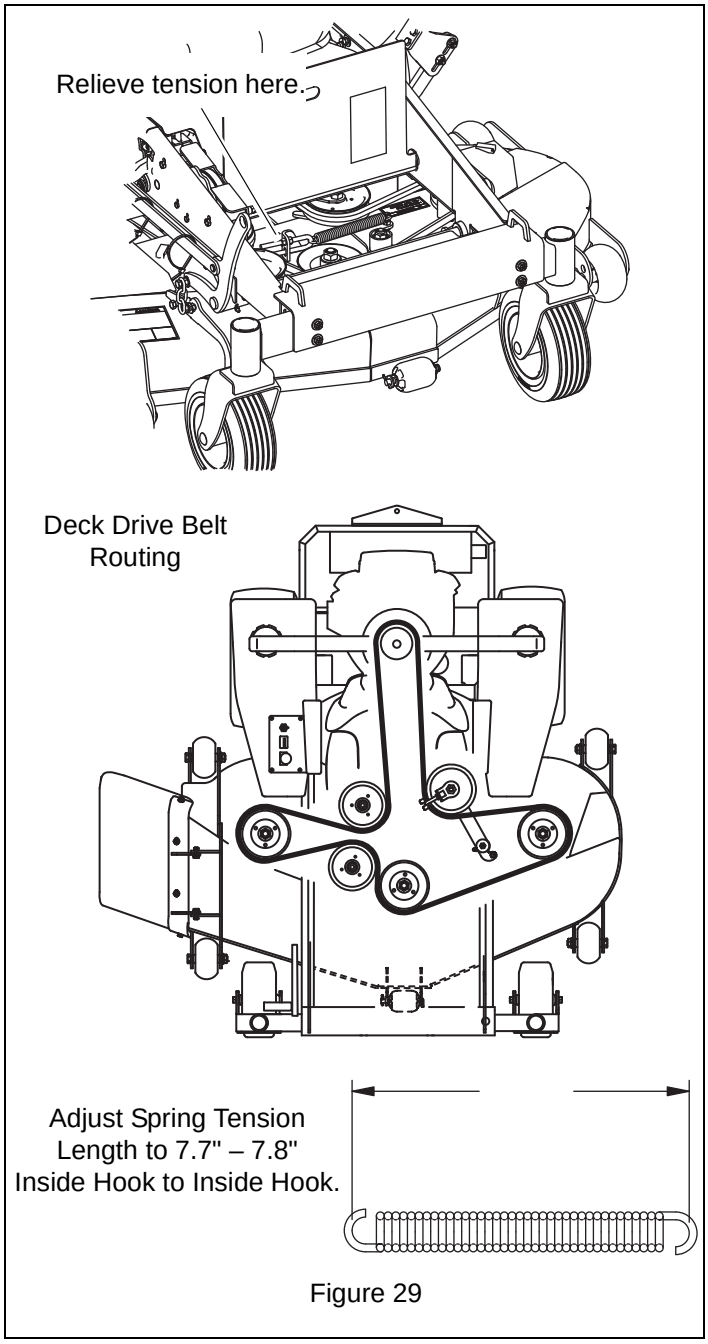


Figure 29

Pump Belt Removal and Installation

1. Make sure the mower is on a firm level surface, the PTO switch is off, the engine is shut off, the steering control levers are in the park position, the negative battery cable is removed, and the lift control lever is unlocked.
2. Place the deck in the highest position.
3. Release the deck belt tension by loosening the tension spring. Remove the belt from the electric clutch. It is not necessary to remove the deck belt from any other pulleys.

IMPORTANT: Use care when releasing belt tension as the pressure on the arm may cause injury or damage to the unit.

4. Release the tension from the pump belt by using a 3/8" breaker bar in the square hole in the tension arm. Pull back on the tension arm and pull the belt back behind the engine pulley.
5. Slide the belt off the pump pulley. Slide the belt above the pulley to allow the belts to be removed from the other pulleys.
6. Once the belt is removed from the pump pulleys, it should slide easily off the engine pulley and idler.
7. Install the new belt by sliding it above the pump pulleys. Route the belt as shown in figure 30.
8. Pull back the idler, move the belt into position and then slowly release the idler to tension the belt.
9. Reinstall the deck belt on the electric clutch pulley.
10. Properly retension the deck belt idler following instructions in *Drive Belt Removal and Installation* on page 28.
11. Connect the negative battery cable.

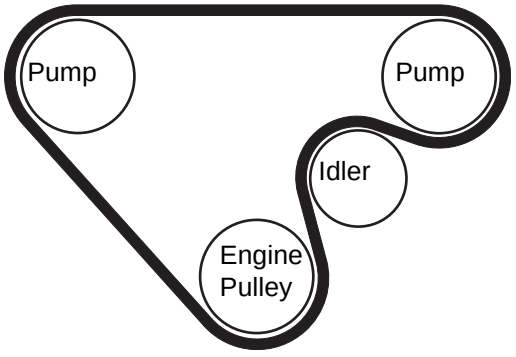


Figure 30

STORAGE

WARNING: AVOID INJURY. Read and understand entire *Safety* section before proceeding.

SHORT TERM

NEVER spray unit with high-pressure water or store unit outdoors.

Inspect unit for visible signs of wear, breakage or damage.

Keep all nuts, bolts and screws properly tightened and know unit is in safe working condition.

Store unit in a cool, dry protected area.

LONG TERM

Clean unit thoroughly with mild soap and low-pressure water and lubricate (see *Maintenance Schedule* on page 17). Touch up all scratched painted surfaces.

Remove weight from wheels by putting blocks under frame or axle.

Clean and charge the battery. Charge battery every three to four weeks when storing unit.

Fuel System

Gasoline left in the fuel system for extended periods without a stabilizer will deteriorate, resulting in gum deposits in the system. These deposits can damage the carburetor and the fuel hoses, filter and tank. Prevent deposits from forming in the fuel system during storage by adding a quality fuel stabilizer to the fuel. Follow the recommended mix ratio found on the fuel stabilizer container.

To treat the fuel system for storage:

1. Add fuel stabilizer according to manufacturers' instructions.
2. Run engine for at least 10 minutes after adding stabilizer to allow it to reach the carburetor.

NEVER store the engine with fuel in the fuel tank inside of a building with potential sources of ignition.

TO TAKE THE UNIT OUT OF STORAGE

1. Refer to the engine service manual to prepare the engine for service.
2. Put fresh, clean fuel in the fuel tank.
3. Begin the maintenance schedule.
4. Charge the battery.

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTION
Excessive Vibration	1. Loose spindle/blade fasteners. 2. Blade interference with grass buildup in deck. 3. Blades out of balance. 4. Blade(s) broken or worn badly. 5. Engine mounting bolts are loose. 6. Engine/Idler/Blade pulley loose. 7. Engine pulley damaged. 8. Failed spindle bearing.	1. Retorque or replace as necessary. 2. Clean the underside of the deck. 3. Balance blades. See *Blade Maintenance* on page 27. 4. Replace blades in set of three. 5. Tighten the engine mounting bolts. 6. Tighten the pulley. 7. Contact Dealer. 8. Contact Dealer.
Uneven Cutting Height	1. Blades dull. 2. Cutting blades bent. 3. Deck not level. 4. Anti-scalp not set correctly. 5. Grass buildup under deck. 6. Incorrect tire pressure. 7. Blade spindle bent. 8. Ground speed too fast.	1. Sharpen or replace blades. 2. Install new blades. 3. Level deck. 4. Adjust height of anti-scalp wheel. 5. Clean underside of deck. 6. Adjust psi to 12 psi rear and 20 psi front. 7. Contact Dealer. 8. Lower ground speed.
Blades Wear Too Fast	1. Cutting in sandy conditions. 2. Cutting in rocky conditions. 3. Heat treat has been removed by sharpening with grinder.	1. Increase deck mowing height. 2. Increase deck mowing height. 3. Replace blades in sets of three.

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTION
Not Cutting Clean	1. Blades dull. 2. Blades installed upside down. 3. Blade RPM too slow. 4. Mower deck not level. 5. Mower tires mashing grass. 6. Ground speed too fast. 7. Excessive grass buildup under deck.	1. Sharpen or replace blades. 2. Install blades correctly. 3. Use full throttle position. 4. See *Tire and Wheel Service* on page 27. Tires under inflated. 5. Too wet or lush to mow. Reverse directions an re-mow area. 6. Reduce ground speed. 7. Clean underside of deck.
Streaking or Windrow Conditions in Cutting Swath	1. Blades dull. 2. Blades installed upside down. 3. Conditions too wet for mowing. 4. Excessive grass buildup under deck. 5. Ground speed to fast for conditions.	1. Sharpen or replace blades. 2. Install blades correctly. 3. Allow grass to dry before mowing. 4. Clean underside of deck. 5. Reduce ground speed.
Blades Won't Rotate	1. Deck belt worn, loose or broken. 2. Deck belt off pulley. 3. Clutch failed.	1. Replace deck belt. 2. Reinstall deck belt. 3. Contact dealer.
Mower Places Load on Tractor	1. Engine RPM too low. 2. Ground speed too fast. 3. Excessive grass buildup under deck.	1. Use full-throttle position. 2. Reduce ground speed. 3. Clean underside of deck.
Excessive Mower Deck Noise	1. Excessive grass buildup under deck.	1. Clean underside of deck.
Engine Idling Poorly	1. Carburetor incorrectly adjusted. 2. Improper spark plug gap.	1. Contact Dealer. 2. Check and regap spark plugs.
Engine Backfires	1. Carburetor adjusted incorrectly.	1. Contact Dealer.
Engine Runs But Unit Won't Move	1. Drive belt loose or broken. 2. Hydraulic reservoir oil low. 3. Pump bypass valve open. 4. Hydraulic oil filter plugged. 5. Bad pump or motor.	1. Tighten or replace drive belt. 2. Refill reservoir. 3. Close bypass valve. 4. Replace hydraulic oil filter. 5. Contact Dealer.
Unit Loses Power or Hydraulic System Overheats	1. Hydraulic oil reserve too low. 2. Hydraulic oil reservoir out of cap.	1. Refill reservoir. 2. Overfill or water contaminated.
Loss of Power or System Will Not Operate in Either Direction	1. Restrictions in air cleaner. 2. Poor compression. 3. Steering linkage needs adjustment. 4. Hydraulic bypass valve open. 5. Pump belt broken or worn. 6. Pump belt off of pulley.	1. Service air cleaner. 2. Contact Dealer. 3. Contact Dealer. 4. Close bypass valve. 5. Replace belt. 6. Reinstall belt on pulley.
Engine Overheats	1. Air intake screen clogged. 2. Cooling fins clogged.	1. Service air intake screen. 2. Clean fins.
Engine Stalling While Blades Engaged	1. Operator not in seat. 2. Faulty safety system. 3. Spindle bearing failure. 4. Blades locked by foreign matter.	1. Sit on seat. 2. Contact Dealer. 3. Contact Dealer. 4. Clean underside of deck.

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	CORRECTION
Low Engine Oil Pressure	1. Low oil level. 2. Oil diluted or too light.	1. Add oil. 2. Change oil and locate source of contamination.
High Oil Consumption	1. Numerous possibilities.	1. Contact Dealer.
Engine Will Not Turn Over	1. Dead Battery. 2. Bad ground connection. 3. Poor terminal connection at battery. 4. Poor wiring harness connections. 5. Bad parking brake switch. 6. Bad PTO switch. 7. Steering control levers not in park position. 8. PTO switch engaged. 9. Operator not in seat. 10. Blown fuse.	1. Charge battery. See *Battery Maintenance* on page 21. 2. Correct the connection. 3. Correct the connection. 4. Correct the connection. 5. Contact Dealer. 6. Contact Dealer. 7. Place steering control levers in park position. 8. Disengage switch. 9. Sit in seat. 10. Replace fuse.
Engine Turns Over But Doesn't Start – There Is Spark at Spark Plug.	1. No fuel or line plugged. 2. Bad fuel solenoid. 3. Dirt in fuel filter. 4. Dirt or water in fuel or stale fuel. 5. Incorrect fuel in fuel system. 6. Choke is not on.	1. Fill tank or replace line. 2. Contact Dealer. 3. Replace fuel filter. 4. Contact Dealer. 5. Drain tanks and replace with proper fuel. 6. Move choke lever to on position.
Engine Turns Over But Doesn't Start – There Is No Spark at Spark Plug.	1. PTO switch is on. 2. Steering levers are not in park position. 3. No operator in seat. 4. Bad seat switch. 5. Bad parking brake switch.	1. Turn off PTO switch. 2. Return levers to park position. 3. Sit in seat. 4. Contact Dealer. 5. Contact Dealer.
Tractor Jerky When Starting, or Operates in One Direction Only.	1. Steering control levers need adjustment. 2. Hydraulic pump failure. 3. Wheel motor failure. 4. Bypass valve open.	1. Contact Dealer. 2. Contact Dealer. 3. Contact Dealer. 4. Close bypass valve.
Tractor Creeps When Steering Levers Are in Neutral Position.	1. Steering control levers need adjustment.	1. Contact Dealer.
Tractor Circles or Veers.	1. Steering control levers need adjustment. 2. Hydraulic pump failure. 3. Wheel motor failure. 4. Tires improperly inflated.	1. Contact Dealer. 2. Contact Dealer. 3. Contact Dealer. 4. Adjust tire pressure.
Abnormal Vibration	1. Engine mounting bolts loose. 2. Loose engine pulley. 3. Engine pulley damaged.	1. Torque engine bolts. 2. Tighten pulley. 3. Contact Dealer.

ACCESSORIES

Part Number	Description
89240500	Folding ROPS Kit

SERVICE PARTS – MOWER

Part Number	Qty	Description
00191378	1	Belt, 48" Deck
00192015	1	Belt, 52" Deck
00191107	3	Blade, 48" Deck
00191108	3	Blade, 52" Deck
03845300	1	Discharge Shield
03848859	1	Shield, LH Deck Belt
03848959	1	Shield, RH Deck Belt
00191517	2	Spindle Assembly, 48" Decks
00191500	2	Spindle Assembly, 52" Deck
00356473	1	Spring, Extension - Deck Spindles
00191201	1	Wheel, Gauge – 5.0"

SERVICE PARTS – TRACTOR

Part Number	Qty	Description
00181071	1	Air Filter – Primary
00181072	1	Air Filter – Secondary (23hp Kawasaki)
00191199	1	Belt, Hydraulic Pump Drive
00180273	1	Choke Cable
00181296	1	Throttle Cable
00180231	1	Dampener, Steering Control
00181073	1	Engine Oil Filter
00181060	1	Fuel Filter
00181251	1	Fuel Tank Cap
00180909	1	Hydraulic Oil Filter
AA191600	1	Hydraulic Oil Reservoir Cap
00105684	1	Ignition Key
00191621	1	Pump Cooler Fan
03551000	1	Starter Solenoid
00180620	1	Ignition Switch
00191256	1	Safety Switch
00136574	1	PTO Engagement Switch
00181074	1	Seat Switch
03785659	1	Fork Weldment
AA191200	1	Wire Harness

SPECIFICATIONS		
Model Number	991800	991802
Model	ProZoom 2352S	ProZoom 1948S
Engine	Kawasaki	Kawasaki
Engine Model Number	FH680V	FH580V
Engine Displacement - Cu. In. (cc)	41.2 (675)	35.7 (585)
Maximum Recommended RPM	3600	
Liquid or Air Cooled	Air	
Speed		
Forward Maximum – MPH (k/h)	10 (14.5)	
Reverse Maximum – MPH (k/h)	4 (6.4)	
Turning Radius	Zero	
Brakes	Mechanical Shoe Brake Integrated Into Wheel Motors	
Electrical		
Starter	Electric	
Battery	12 Volt DC 245 CCA	
Power Take-Off	Electric PTO Clutch/Brake	
Fuel		
Fuel Type	Unleaded Min. 87 Octane	
Fuel Tank Capacity – Gal. (L)	11.8 (44.8)	
Transmission		
Type	Hydraulic Drive	
Transmission Oil	Use 20W-50 engine oil with an SL API classification	
Hydraulic Oil Filter	Yes	
Size and Weight		
Length – in. (cm)	72.7 (184.7)	
Width (With Chute Up) – in. (cm)	53.6 (136.1)	48.5 (123.2)
Height – in. (cm)	47 (119.3)	
Weight – lb. (kg)	963 (436.8)	955 (433.2)
Tires		
Front Tire Size – in. (cm)	11 x 4.5-6 Caster	
Rear Tire Size – in. (cm)	23 x 10.5-12, 4-Ply	
Front Tire Pressure – psi (kpa)	20 (137.9)	
Rear Tire Pressure – psi (kpa)	12 (82.7)	
Mower Deck		
Mower Deck Lift	Foot Operated Spring Assist	
Cutting Width – in. (cm)	52 (132.0)	48 (121.9)
Cutting Height – in. (cm)	1.5 – 5.5 (3.8 – 14.0)	
Cutting Height Increments – in. (cm)	.25 (.6)	

Two-Year Limited Lawn and Garden Commercial Warranty

Ariens Company (Ariens) warrants to the **original purchaser** that Ariens and Gravely brand products manufactured by Ariens, designated or labeled commercial products by Ariens, and sold after December 31, 2007 will be free from defects in material and workmanship for a period of two years after the date of purchase or 1000 hours of use, whichever comes first. An authorized Ariens dealer (Ariens brand products) or Gravely dealer (Gravely brand products) will repair any defect in material or workmanship, and repair or replace any defective part, subject to the conditions, limitations and exclusions set forth herein. Such repair or replacement will be free of charge to the original purchaser (labor and parts), except as noted below.

Limited Lifetime Warranty on Mower Deck Shell

The deck shell is warranted to the **original purchaser** against any defect in material or workmanship for as long as the original purchaser owns the product. Any defect in material or workmanship of the deck shell will be repaired free of charge (parts and labor) to the original purchaser for two years or 1000 hours of use, whichever comes first. After two years or 1000 hours of use, the parts required to repair a defect in material or workmanship of the deck shell, not the labor, will be provided free of charge for as long as the original purchaser owns the product.

Limited Lifetime Warranty on Main Frame

The main frame is warranted to the **original purchaser** against any defect in material or workmanship for as long as the original purchaser owns the product. Any defect in material or workmanship of the main frame will be repaired free of charge (parts and labor) to the original purchaser for two years or 1000 hours of use, whichever comes first. After two years or 1000 hours of use, the parts required to repair a defect in material or workmanship of the main frame, not the labor, will be provided free of charge for as long as the original purchaser owns the product.

Three-Year Limited Warranty on Deck Spindles

Mower deck spindles are warranted to the **original purchaser** for three years from the date of purchase. Any defect in material or workmanship of the mower deck spindles will be repaired free of charge (parts and labor) to the original purchaser for two years after the date of purchase. After two years, the parts required to repair a defect in material or workmanship of the deck spindles, not the labor, will be provided free of charge.

One-Year Limited Warranty on 21-inch Walk-Behind Lawn Mowers

21-inch walk-behind lawn mowers labeled or designated by Ariens as a Professional/Commercial product put to any business use, agricultural, commercial, or industrial, are warranted to the **original purchaser** to be free from defects in material and workmanship for a period of one year after the date of purchase.

90-Day Limited Warranty on Service Parts and Accessories

Genuine Ariens or Gravely brand service parts and accessories are warranted to be free from defects in material and workmanship for a period of 90 days after the date of purchase. An authorized Ariens or Gravely dealer will repair or replace any such part or accessory free of charge, except for labor, during that period.

If any product is rented or leased, then the duration of these warranties shall be 90 days after the date of purchase.

Exceptions, Limitations, Exclusions

Customer Responsibilities

Register the product immediately at the time of sale. If the dealer does not register the product, the customer must complete the product registration card in the literature package and return it to the Ariens Company, or register the unit online at www.ariens.com or www.gravely.com.

To obtain warranty service, the **original purchaser** must:

- Perform the maintenance and minor adjustments explained in the owner's manual.
- Promptly notify Ariens or an authorized Ariens or Gravely service representative of the need for warranty service.
- Transport the product to and from the place of warranty service.
- Have the warranty service performed by an authorized Ariens or Gravely service representative.

To find an Ariens or Gravely authorized service representative, contact Ariens at:

655 W. Ryan Street
Brillion, WI 54110
(920) 756 - 2141
www.ariens.com
www.gravely.com

Limitations

- Batteries are warranted only for a period of 12 months after date of purchase, on a prorated basis. For the first 90 days of the warranty period, a defective battery will be replaced free of charge. If the applicable warranty period is more than 90 days, Ariens will cover the prorated cost of any defective battery, for up to 12 months after the date of purchase.

Exclusions – Items Not Covered by This Warranty

- Engines and engine accessories are covered only by the engine manufacturer's warranty and are not covered by this warranty.
- Eye-Q™ and Scan-Mate™ units are covered by their own warranty and are not covered by this warranty.
- Parts that are not genuine Ariens or Gravely service parts are not covered by this warranty.
- The following maintenance, service and replacement items are not covered by this warranty unless they are noted in the Limitations section above: lubricants, spark plugs, oil, oil filters, air filters, fuel filters, brake linings, brake arms, shoes, runners, scraper blades, shear bolts, mower blades, mower vanes, headlights, light bulbs, knives, cutters.
- Mufflers, belts and tires on Ariens and Gravely commercial lawn and garden products are not covered by this warranty.
- Any misuse, alteration, improper assembly, improper adjustment, neglect, or accident which requires repair is not covered by this warranty.
- This warranty applies only to products purchased in the United States (including Puerto Rico) and Canada. In all other countries, contact place of purchase for warranty information.

Disclaimer

Ariens may from time to time change the design of its products. Nothing contained in this warranty shall be construed as obligating Ariens to incorporate such design changes into previously manufactured products, nor shall such changes be construed as an admission that previous designs were defective.

LIMITATION OF REMEDY AND DAMAGES

Ariens Company's liability under this warranty, and under any implied warranty that may exist, is limited to repair of any defect in workmanship, and repair or replacement of any defective part. Ariens shall not be liable for incidental, special, or consequential damages (including lost profits). Some states do not allow the exclusion of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

DISCLAIMER OF FURTHER WARRANTY

Ariens Company makes no warranty, express or implied, other than what is expressly made in this warranty. If the law of your state provides that an implied warranty of merchantability, or an implied warranty of fitness for particular purpose, or any other implied warranty, applies to Ariens Company, then any such implied warranty is limited to the duration of this warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Ariens Company
655 West Ryan Street
Brillion, WI 54110-1072
920-756-2141
Fax 920-756-2407
www.ariens.com

⚠ WARNING ⚠

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Pro-Zoom

Parts Manual

Model

991800 - Pro-Zoom 2352S
991802 - Pro-Zoom 1948S

03856000 3/09
Printed in USA

THE MANUAL

Before you operate your unit, carefully and completely read manuals supplied with the unit. The contents will provide you with an understanding of safety instructions and controls during normal operation and maintenance.

For your safety and the safety of others always read, understand, and follow all DANGER, WARNING, and CAUTION messages found in manuals and on safety decals.

Hardware descriptions are given in decimals.

Decimals to Fractions			
.063	1/16	.563	9/16
.125	1/8	.625	5/8
.188	3/16	.688	11/16
.250	1/4	.750	3/4
.313	5/16	.813	13/16
.375	3/8	.875	7/8
.438	7/16	.938	15/16
.500	1/2	1.00	1

SERVICE AND REPLACEMENT PARTS

When ordering replacement parts or making service inquiries, know the Model and Serial numbers of your unit and engine.

Numbers are located on the product registration card in the unit literature package. They are printed on a serial number label, located on the frame of your unit.

• Record Unit Model and Serial numbers here:

• Record Engine Model and Serial numbers here:

UNAUTHORIZED REPLACEMENT PARTS

Use only Ariens replacement parts. The replacement of any part on this vehicle with anything other than an Ariens authorized replacement part may adversely affect the performance, durability, or safety of this unit and may void the warranty. Ariens disclaims liability for any claims or damages, whether warranty, property damage, personal injury or death arising out of the use of unauthorized replacement parts.

PRODUCT REGISTRATION

The Ariens dealer must register the product at the time of purchase. Registering the product will help the company process warranty claims or contact you with the latest service information. All claims meeting requirements during the limited warranty period will be honored, whether or not the product registration card is returned. Keep a proof of purchase if you do not register your unit.

Customer Note: If Dealer does not register your product, please fill out, sign and return the product registration card to Ariens or go to www.ariens.com.

YOUR SATISFACTION IS IMPORTANT

Questions? Please follow these helpful steps:

1. Refer to the manuals supplied with your unit.

   They will guide you through safe and proper operation and maintenance.

   They contain specifications on your unit.

   If your questions are not answered in these manuals, go to step number two.
2. Contact Your Dealer.

   Our dealers will be happy to supply any service or advice required to keep your unit operating at peak efficiency.

   A factory trained staff is available to support your equipment needs. They stock genuine Ariens parts and lubricants manufactured with the same precision and skill as the original.

   If your questions are not resolved by the support staff, ask for the manager or owner.

   When contacting your Dealer supply your model and serial numbers.

TO SPEED PARTS ORDERING:

1. Know the model and serial numbers of your unit.
2. Know the part number required.
3. Know the quantity required.
4. Know the part description.

Models

Domestic

Model 991800 (Pro-Zoom 2352S)
23hp Kawasaki with 52” Mower
Serial No. 000101 and up

Model 991802 (Pro-Zoom 1948S)
19hp Kawasaki with 48” Mower
Serial No. 000101 and up

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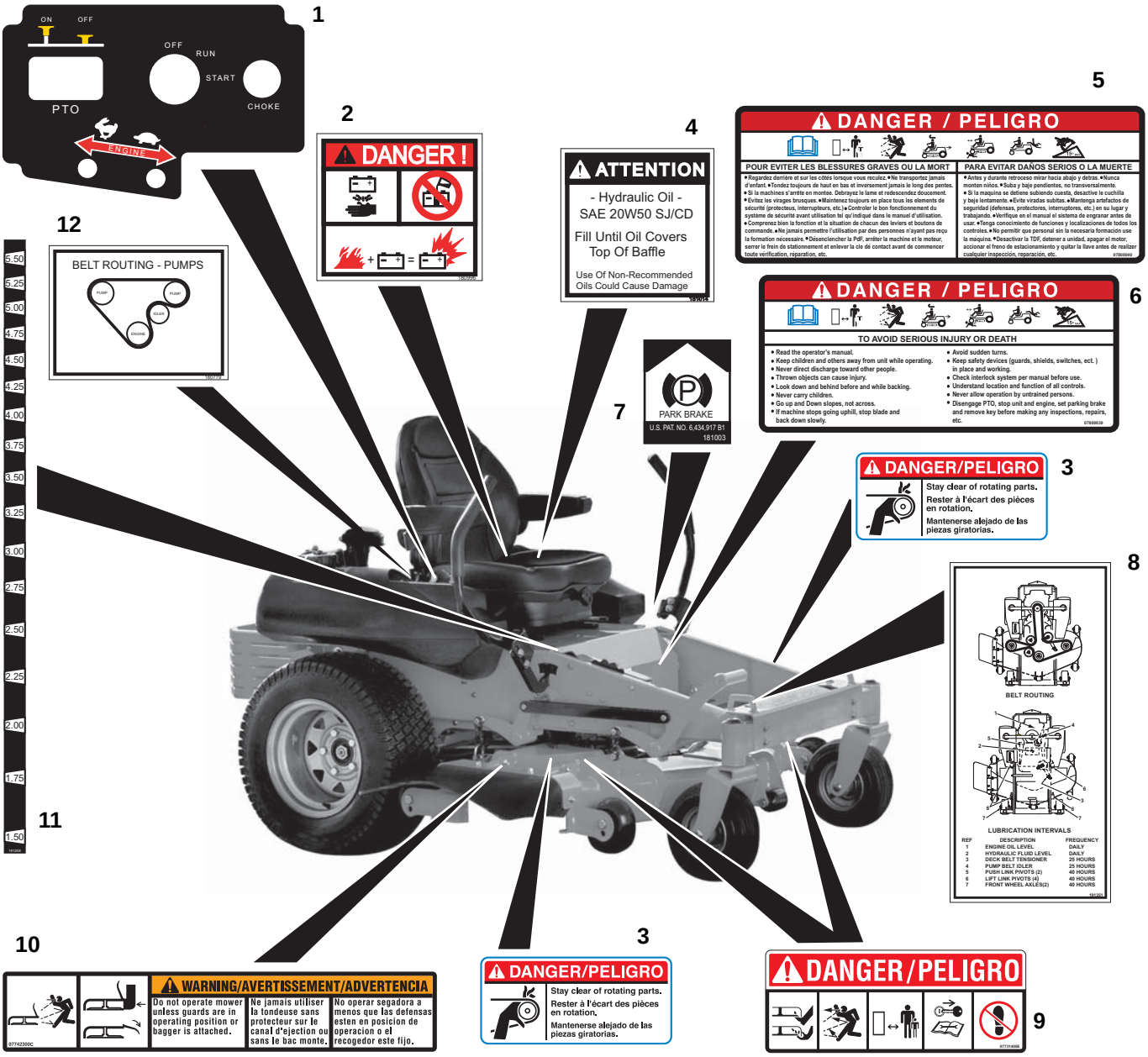
DECALS-SAFETY

Model 991800, 802



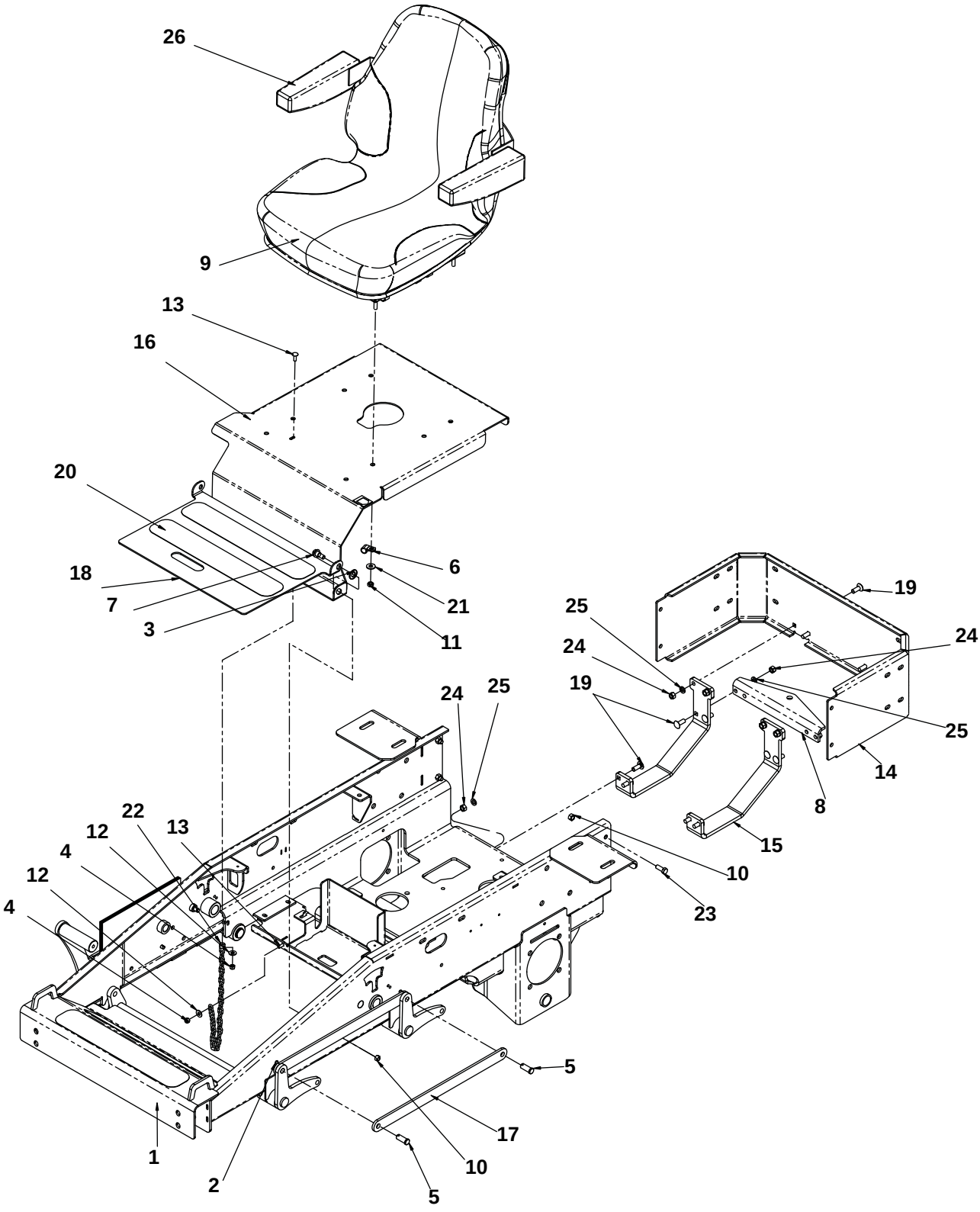
Item	Part No.	Qty.	Description
1	07800042	1	Decal, Control Panel
2	00180996	2	Decal, Danger - Battery
3	05236900	1	Decal, Danger Belt Rotation
4	00181254	1	Attention, Hydraulic Reservoir
5	07800040	1	Decal, Safety French/Spanish
6	07800039	1	Decal, Safety English
7	00181003	2	Decal, Park Brake
8	00191351	1	Decal, Belt RT and Lub Instruction
9	07731400	2	Decal, Mower Pan Danger
10	07742300	1	Decal, Warning
11	00191208	1	Decal, HOC Index
12	00180779	1	Decal, Pump Belts

Model 991800, 802

Item	Part No.	Qty.	Description
1	07800115	1	Decal, Ariens ProZoom
2	03818300	1	Decal, Ariens Since 1933
3	07800024	1	Decal, Features
4	07800106	1	Decal, Made in USA/Flag
5	07800023	1	Decal, Powered By Kawasaki
6	07800026	1	Decal, Deck Size 52” (800)
	07800025	1	Decal, Deck Size 48” (802)
7	07800117	1	Decal, 23hp (800)
	07800116	1	Decal, 19hp (802)

FRAME, SEAT AND SEAT SUPPORT

Model 991800, 802

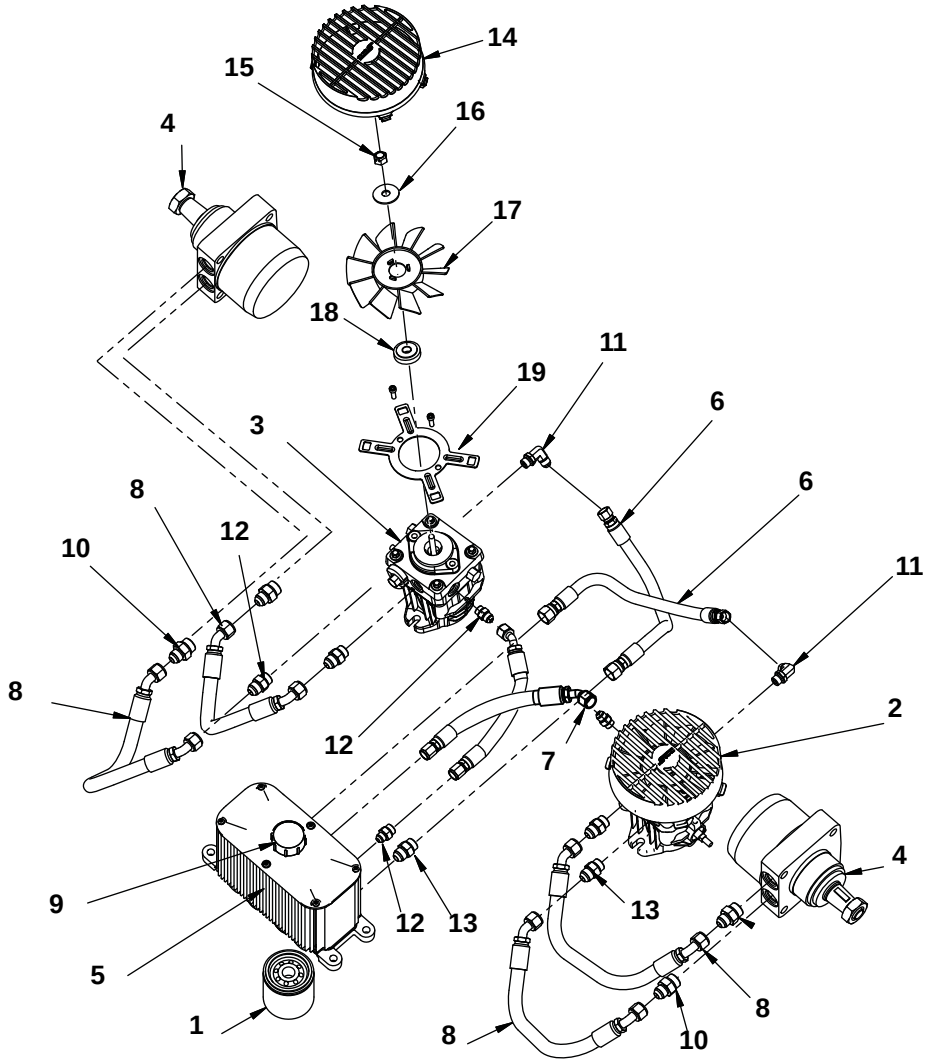


Frame, Seat and Seat Support

Model 991800, 802

Item	Part No.	Qty.	Description
1	03786059	1	Weldment, Frame
2	00967354	4	Ring, Rue .500 x .062 x 1.420
3	00967398	1	Washer, .510 x 1.00 x .068 Nylon
4	00964048	2	Locknut, 1/4-20 Nyloc
5	00110330	4	Pin, Cleavis .500 x 1.25 x 1.02
6	00111886	1	P-Clip, .500 Insulated
7	00135139	1	Bolt, 1/2 x 1.00 x 3/8-16 SLD 5
8	03817259	1	Plate, Hitch
9	00674000	1	Seat, Suspension - Light Grey
10	00964022	5	Locknut, 3/8-16 Crown
11	00964021	4	Locknut, 5/16-18 Crown
12	AA960700	2	Washer, .250 Reg. Flat
13	00963095	2	Bolt, 1/4-20 x .750 Grade 5
14	03786659	1	Plate, Rear Guard
15	03786259	2	Brace. Bent Arm Hitch
16	03786300	1	Plate, Seat w/Decals
17	00191142	4	Plate, Arm Connector Link
18	03786459	1	Plate, Floor Pan
19	00963019	12	Bolt, 3/8-16 x 1.00 Grade 5
20	00191257	4	Tape, Traction 3.00 x 17.00
21	00960701	4	Washer, .313 Reg. Flat
22	00191487	1	Chain, .148 x 28 Links
23	00960046	4	Bolt, 3/8-16 x 1.00 Hex 5
24	00960502	12	Nut, 3/8-16 STD Hex Grade 5
25	00960602	12	Washer, .375 Med. Spring Lock
26	59204500	2	Kit, Arm Rest

Model 991800, 802



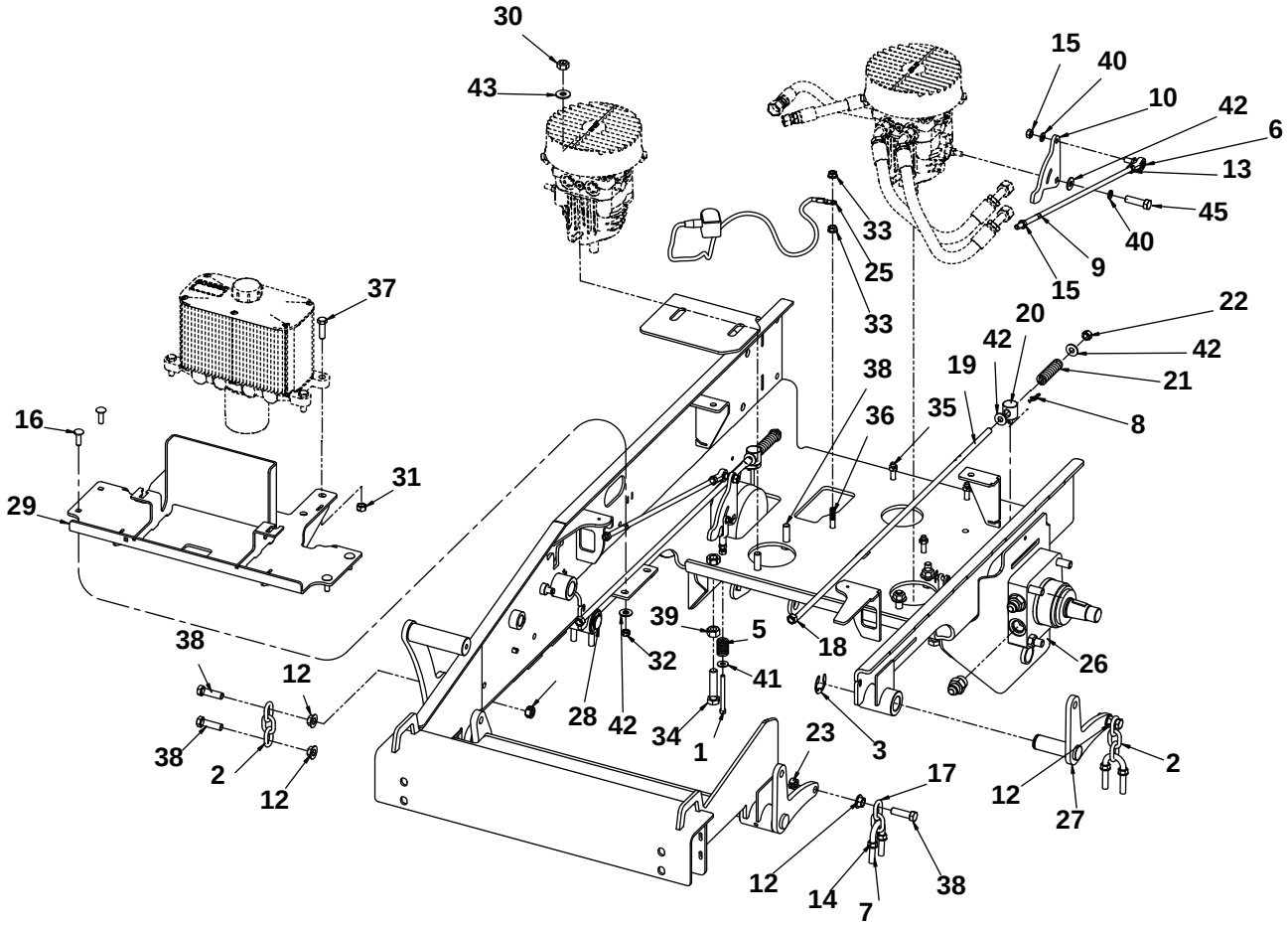
HYDRAULICS

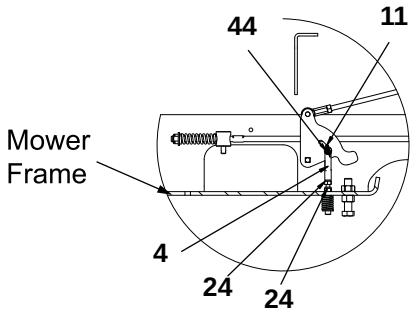
Model 991800, 802

Item	Part No.	Qty.	Description
1	00180909	1	Filter, 25 MICRON
2	00261600	1	Pump, Hydro-Gear Left Hand
3	00273900	1	Pump, Hydro-Gear Right Hand
4	00191103	2	Wheel Motor, Parker TL195
5	00191157	1	Tank, Hydraulic
6	00191204	2	Hose, Hydraulic 3/8 9/16 & 3/4FJICSW
7	00191205	2	Hose, Hydraulic 3/8 9/16JICFESW
8	00191206	4	Hose, Hydraulic 1/2 3/4FJICSW45°
9	00191600	1	Cap, Hydraulic
10	00231104	4	Adapter, 7/8MOR X 3/4MJIC
11	313270	2	Fitting, 90 9/16 MOR X 9/16 MJIC
12	00221285	2	Fitting, ADP 9/16-18MORX9/16MJIC
13	00313391	2	Adapter, 3/4-16MORX 3/4-16JIC
14	00191620	2	Shroud, PUMP
15	964066	2	Locknut, 3/8-24 CROWN
16	00180995	2	Washer, .375 X 1.24 X .072 BLVL
17	00191621	2	Fan,Pump
18	00180994	2	Hub, Fan
19	00191622	2	Plate, Shroud Mount
20	191618	2	Seal Kit, Hydro-Gear Pump
21	191619	2	Seal Kit, Parker Wheel Motor

BRAKE LINKAGE

Model 991800, 802





Steering Return To Neutral

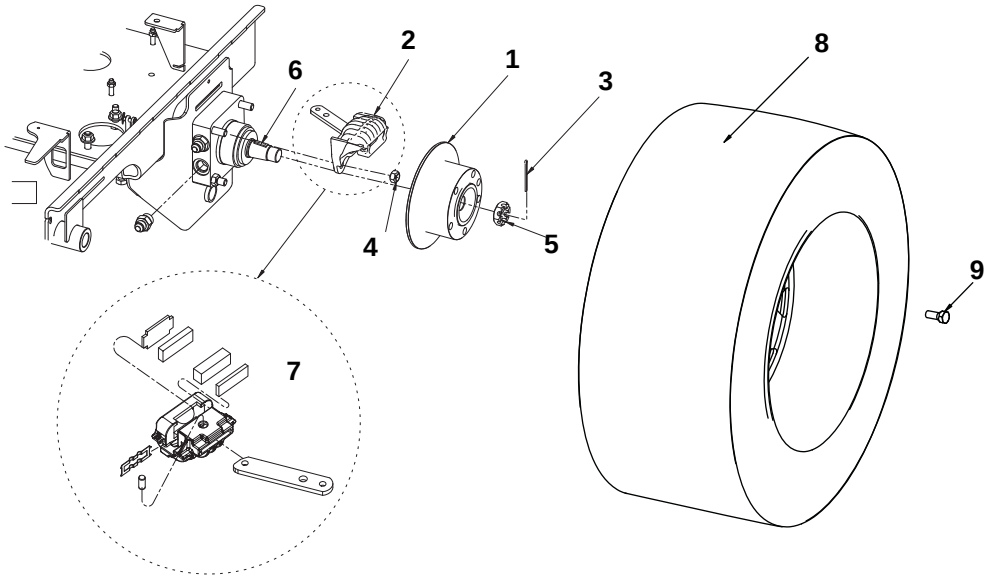
BRAKE LINKAGE

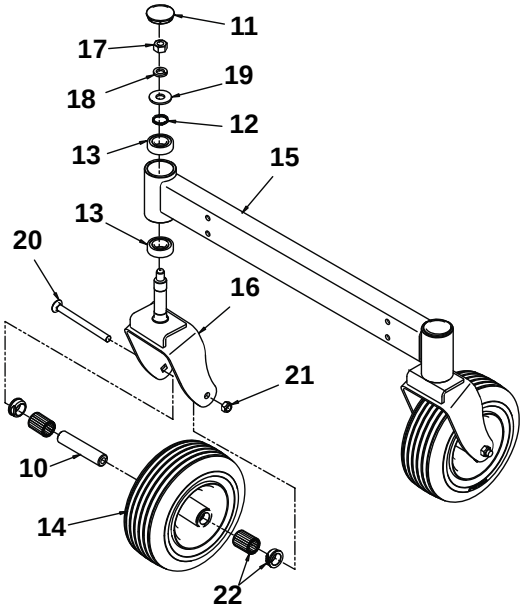
Model 991800, 802

Item	Part No.	Qty.	Description
1	00967393	2	Bolt, 1/4-20 x 2.75 SOC 8
2	00150109	3	Chain - 3 Links
3	00180922	2	E-Ring, 1.00 x .050
4	00180956	2	Yoke, 1/4-20 RH Adjustable
5	00180957	2	Spring, Compression .784 x .092 x 1.50
6	00180982	2	Ball Joint, LH 5/16 FMAL W/STD
7	00181017	3	U-Bolt, RD 1.00 x 2.50 x 3/8-16
8	00967353	2	Ring, Rue .375 x .054 x 1.254
9	00191080	2	Rod, Pump Control
10	00255500	2	Plate, Pump Control Arm
11	00967350	2	Ring, Rue .250 x .041 x .844
12	00967342	5	Locknut, 7/16-14 Whiz
13	00967338	2	Nut, 5/16-24 Hex Grade 5 LH
14	00964016	6	Locknut, 3/8-16 Whiz
15	00964003	4	Nut, 5/16-24 STD Hex Grade 5
16	00963074	4	Bolt, 5/16-18 x 1.00 CRG 2
17	00191129	1	Chain, 2 Links 1/4"
18	00967054	2	Nut, 3/8-24 STD Hex Grade 5
19	00191175	2	Rod, Brake
20	00191176	2	Pin, Brake Linkage
21	00191177	2	Spring, Compression .710 x .142 x 2.50
22	00964066	2	Locknut, 3/8-24 Crown
23	00964061	4	Locknut, 7/16-14 Center
24	00964048	4	Locknut, 1/4-20 Nyloc
25	00191227	1	Cable, Battery - 35" Ground
26	00191509	2	Weldment, Wheel Motor Plate
27	03890159	1	Weldment, LH Front Deck Lift
28	03891259	1	Weldment, RH Front Deck Lift
29	03785759	1	Weldment, Battery/Tank Plate
30	00964025	4	Locknut, 7/16-14 Crown
31	00964022	4	Locknut, 3/8-16 Crown
32	00964021	7	Locknut, 5/16-18 Crown
33	00964019	2	Locknut, 5/16-18 Whiz
34	00473450	2	Bolt, 1/2-13 x 2 3/4 Grade 2
35	00960025	3	Bolt, 5/16-18 x 1.50 Hex Grade 5
36	00960026	1	Bolt, 5/16-18 x 1.75 Hex Grade 5
37	00960047	4	Bolt, 3/8-16 x 1.25 Hex Grade 5
38	00960081	9	Bolt, 7/16-14 x 1.50 Hex Grade 5
39	00960504	2	Nut, 1/2-13 STD Hex Grade 5
40	AA960601	4	Washer, .313 Med Spring Lock
41	AA960700	2	Washer, .250 Reg Flat
42	00960701	10	Washer, .313 Reg Flat
43	00960702	4	Washer, .375 Reg Flat
44	AA962200	2	Pin, CVS .250 x 1.00 x .859
45	00961284	2	Bolt, M8 x 1.25 x 20 He 8.8”

CASTERS, WHEELS AND BRAKE

Model 991800, 802





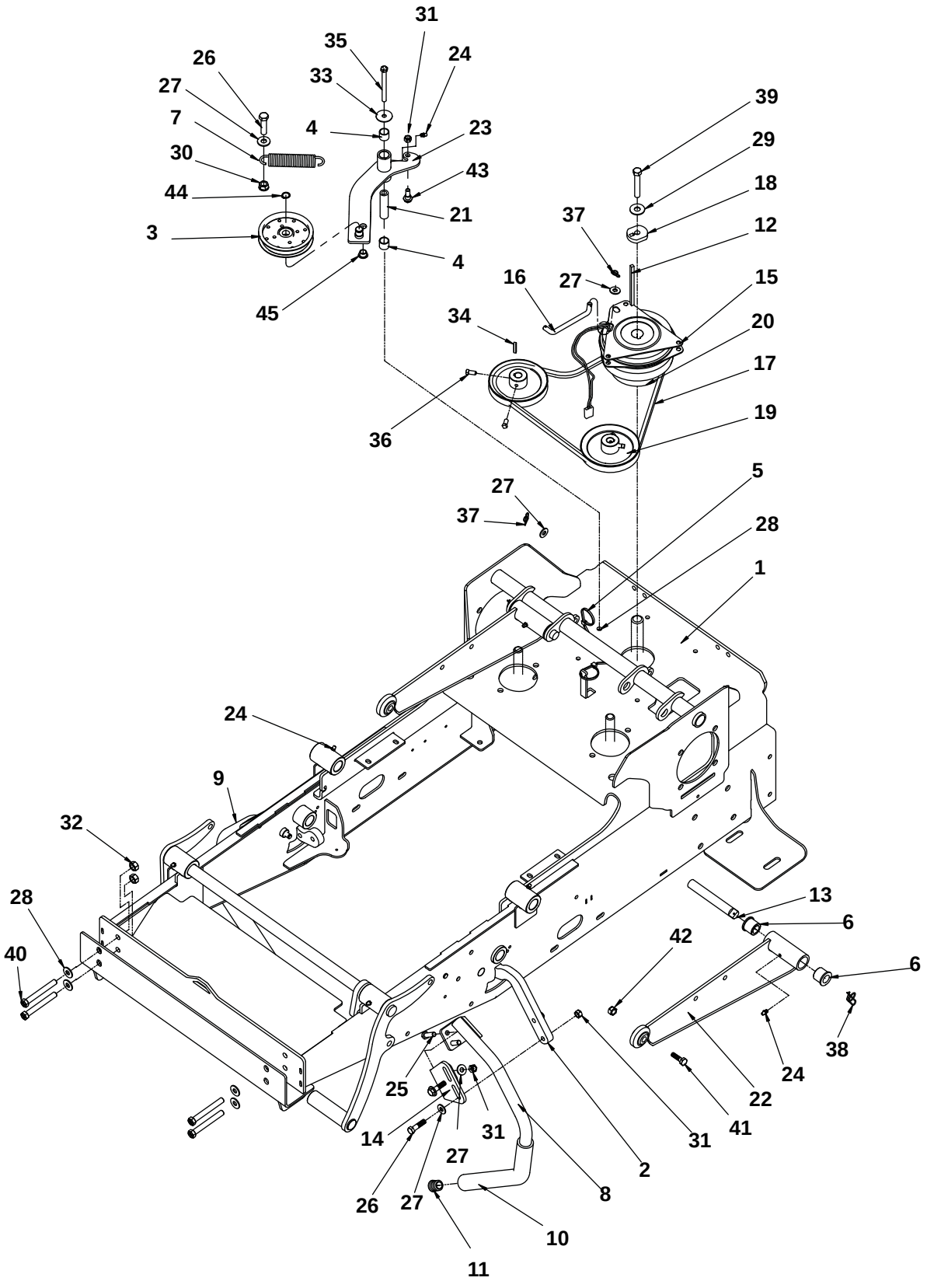
CASTERS, WHEELS AND BRAKE

Model 991800, 802

Item	Part No.	Qty.	Description
1	00191110	2	Wheel Hub, 8" Disc 5 Bolt
2	00191111	1	Assembly, M15 Brake & Bracket CCW - LH
	00191112	1	Assembly, M15 Brake & Bracket CW - RH
3	00962020	2	Pin, Cotter .125 X 1.75 EXTP
4	AA964000	8	Locknut, 1/2-13 Crown
5	191625	2	Nut, Hub Retaining
6	00191603	2	Key, Woodwuff .312X1.00-#502 HRD
7	00191606	2	Kit, 3/16 Disc Brake Pad S/O
8	00191228	2	Assembly, Tire & Rim - 23X10.50-12
	00191229	2	Tire S/O
	00191721	2	Rim S/O
9	00967133	10	Bolt, 1/2-20 x 1.00 Lug
10	00191049	2	Tube, RD 1.00 x .500 x 4.76
11	00191052	2	Cap, Dust 2.04
12	AA191100	2	Washer, Wave 1.0 Shaft 1.25 Bore
13	00149230	4	Bearing, Ball .984 x 2.05 x .591 - 6205
14	00200778	2	Assembly, Tire & Rim 11 x 4-5 W/R BRG
15	03785559	1	Weldment, Front Axle
16	03785659	2	Weldment, Front Wheel Fork
17	00960505	2	Nut, 5/8-11 STD Hex Grade 5
18	00960605	2	Washer, .625 Medium Spring Lock
19	00960705	2	Washer, .625 Reg Flat
20	00963011	2	Bolt, 1/2-13 x 6.00 CRG
21	AA964000	2	Locknut, 1/2-13 Crown
22	00191604	1	Kit, 1.00 x 4.75 Hub Bearing

Steering Controls and Clutch

Model 991800, 802

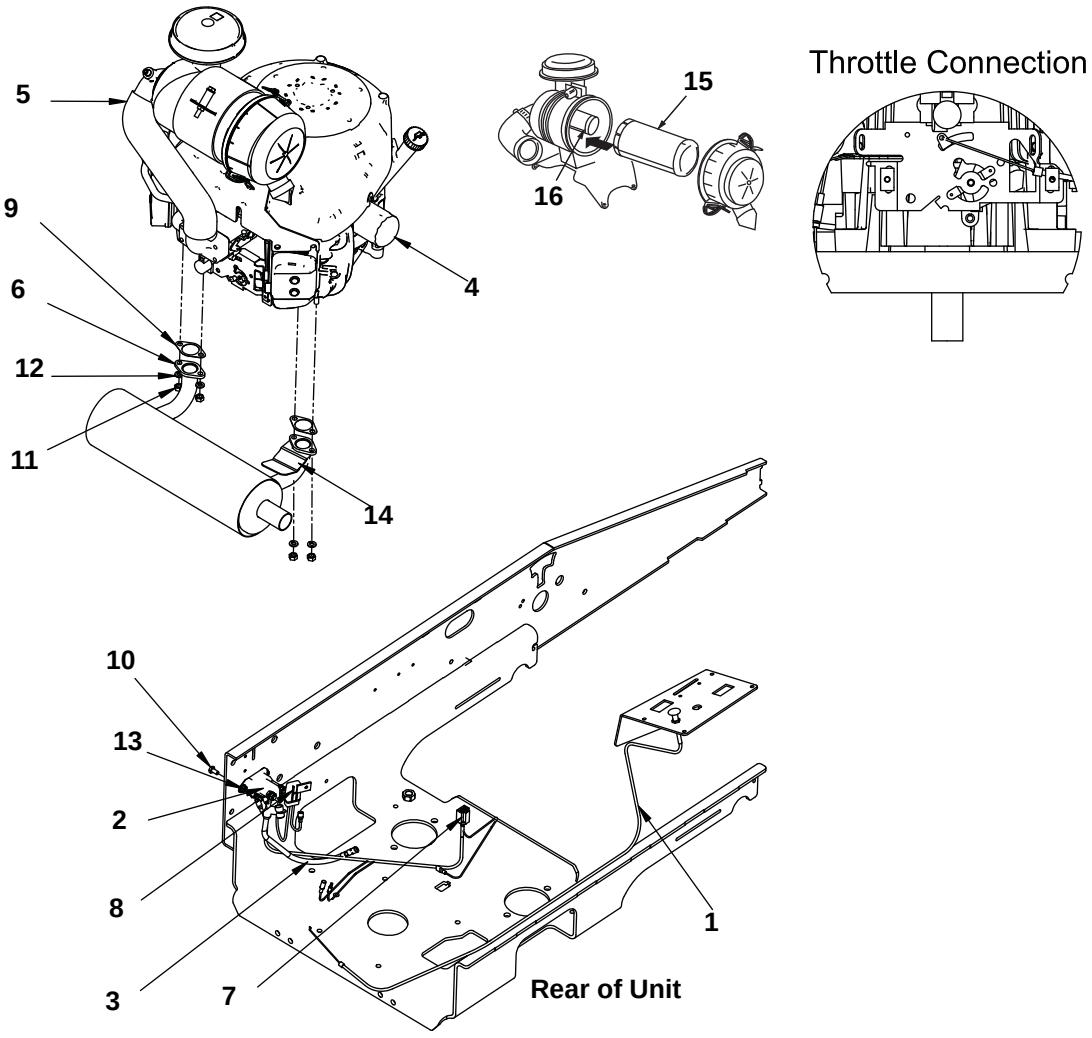


STEERING CONTROLS

Model 991800, 802

Item	Part No.	Qty.	Description
1	03786059	1	Weldment, Frame and Deck Lift
2	00191082	2	Plate, Steering Control
3	00180927	1	Pulley, Flat 4.00 x .670 w/Bearing
4	00105546	2	Bearing, Sleeve .753 x .878 x .750
5	00111910	2	Cable Tie, .15 x 8.50
6	00150079	4	Bearing, Flange .750 x 1.13 x 1.00
7	00110580	1	Spring, Extension .875 x .125 x 4.25
8	00181348	1	Weldment, LH Steering Handle
9	00181347	1	Weldment, RH Steering Handle
10	00180617	2	Grip, Foam
11	00180639	2	Plug, 7/8" End
12	180962	1	Key, .250 x .250 x 4.62 Square
13	00191048	2	Pin, MFG .625 x 5.38 x 4.88 x DRL
14	00191083	2	Plate, Steering Control Bent
15	00191109	1	Clutch, Electric - OGURA, GT2.5
16	00191166	1	Rod, Clutch Antirotation
17	00192111	1	Belt, A46K ARAMID CORD
18	00191203	1	Washer, Clutch Universal w/Key
19	00191265	2	Pulley, V-Belt 5.00 x .591 w/Key
20	00191268	1	Pulley, V-Belt 4.50 x 1.00 w/Key
21	00191347	1	Tube, Ø.750 x Ø.438 x 3.047
22	00191577	2	Weldment, Deck Push Link
23	00191534	1	Weldment, Pump Belt Tensioner
24	00959995	7	Fitting, 1/4-28 Straight Grease Zerk
25	00960047	4	Bolt, 3/8-16 X 1.25 Hex Grade 5
26	00960048	7	Bolt, 3/8-16 X 1.50 Hex Grade 5
27	00960701	11	Washer, .313 Reg Flat
28	00960702	5	Washer, .375 Reg Flat
29	AA960703	1	Washer, .438 Reg Flat
30	00964016	2	Locknut, 3/8-16 Whiz
31	00964022	12	Locknut, 3/8-16 Crown
32	00964025	4	Locknut, 7/16-14 Crown
33	00964502	1	Washer, .375 X 1.50 X .O63 Flat
34	00966058	2	Key, M5 X M5 X M30 RD
35	00960058	1	Bolt, 3/8-16 X 4.00 Hex Grade 5
36	00967343	4	Set Screw, 5/16-18 X .625 Square Cup
37	00967353	2	Ring, Rue .375 x .054 x 1.254
38	00967357	2	Ring, Rue .750 x .080 x 2.081
39	00967394	1	Bolt, 7/16-20 X 2.75 Hex Grade 5
40	00967399	4	Bolt, 7/16-14 X 3.5 Hex Grade 5
41	00960117	2	Bolt, 1/2-13 X 2.25 Hex Grade 5
42	AA964000	2	Locknut, 1/2-13 Crown
43	00135139	1	Bolt, 1/2 X 1.06 X 3/8-16 X .421
44	967019	1	Snap Ring
45	00180354	1	Bearing, Flange .502 X .629 X .421

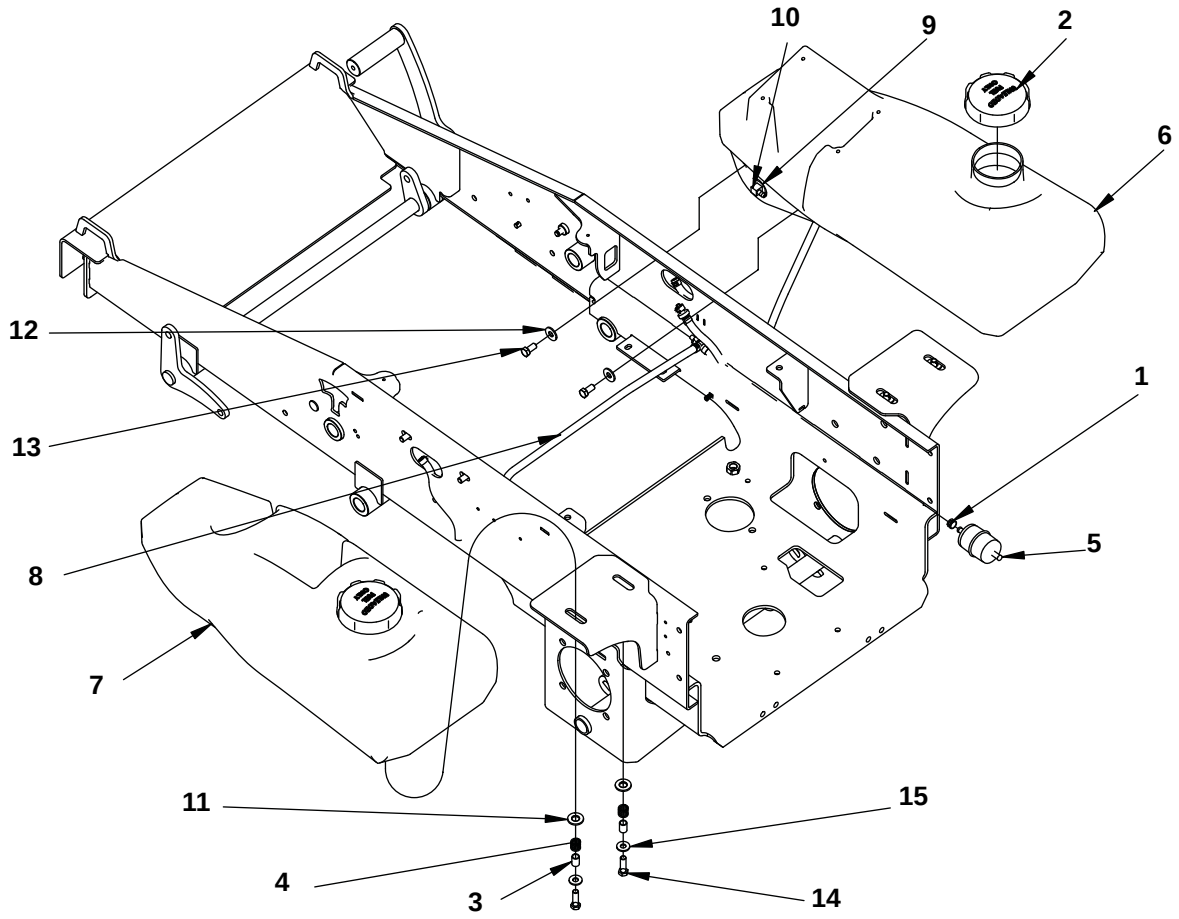
Model 991800, 802



Item	Part No.	Qty.	Description
1	00180273	1	Cable, Choke 48"
2	03551000	1	Solenoid, 12 V Starter
3	00180842	1	Cable, 12’ Starter
4	00181073	1	Oil Filter
5	00200675	1	Engine, Kawasaki 19 HP (802)
	00191123	1	Engine, Kawasaki 23 HP (800)
6	00191125	1	Muffler, Kawasaki ONLY FH-HORI (800)
	00278200	1	Muffler, Kawasaki ONLY FH-HORI (802)
7	00288200	1	Adapter Harness, Kawasaki
8	00191260	1	Adapter Harness, Kawasaki, Fuse
9	00191601	2	Kit, Muffler Gasket (Includes items 9, 11 and 12)
10	AA960000	2	Bolt, 1/4-20 x .500 Hex 5
11	00961553	2	Nut, M8 x 1.25 Hex GR8.8
12	00961603	2	Washer, M8 Spring Lock
13	00964040	2	Locknut, 1/4-20 Whiz
14	00191365	1	Shield, Exhaust
15	00181071	1	Filter, Primary Air (800)
	00186700	1	Filter, Air (802)
16	00181072	1	Filter, Secondary Air (800)

FUEL TANK

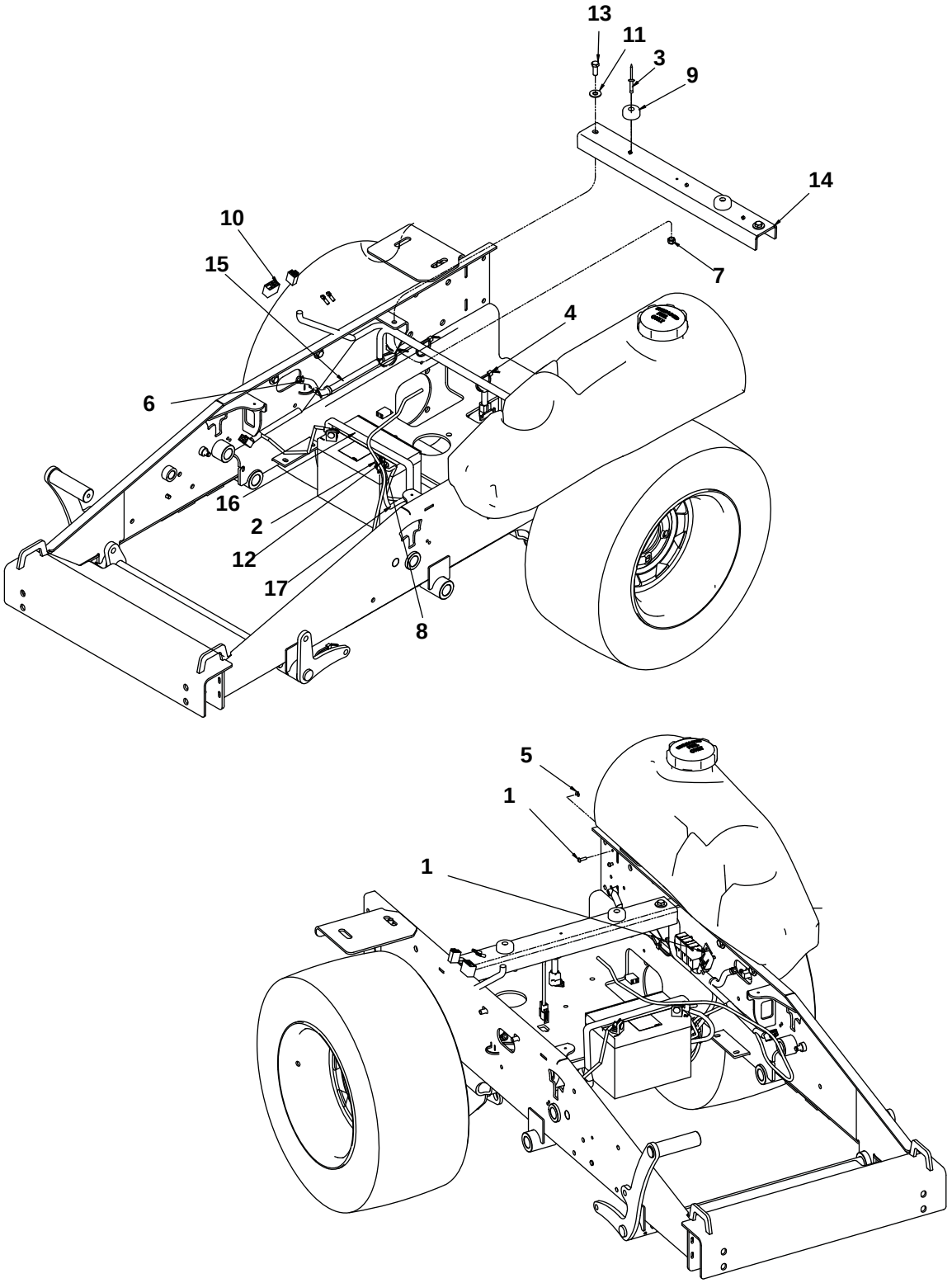
Model 991800, 802



Item	Part No.	Qty.	Description
1	00130924	3	Clamp, 1/2 Spring Hose
2	00181251	2	Fuel Cap
3	00181023	4	Spacer, Gas Tank Attachment
4	00181027	4	Spring, Commpression .660 x .067 x .625
5	00181060	1	Fuel Filter
6	03793900	1	Tank, RH Midmount Blank w/Cap
7	03793800	1	Tank, LH Midmount Blank w/Cap
8	00191282	1	Assembly, Fuel Line w/Checkvalves
9	00181208	2	Grommet, Tank Fitting Rubber
10	00191605	2	Fitting, 90 Degree
11	00964505	2	Washer, .500 x 1.00 x .105 Flat
12	00960702	4	Washer, .375 REG Flat
13	00960045	4	Bolt, 3/8-16 x .750 Hex Grade 5
14	00960047	4	Bolt, 3/8-16 x 1.25 Hex Grade 5
15	00960701	4	Washer, .313 REG Flat

BATTERY

Model 991800, 802

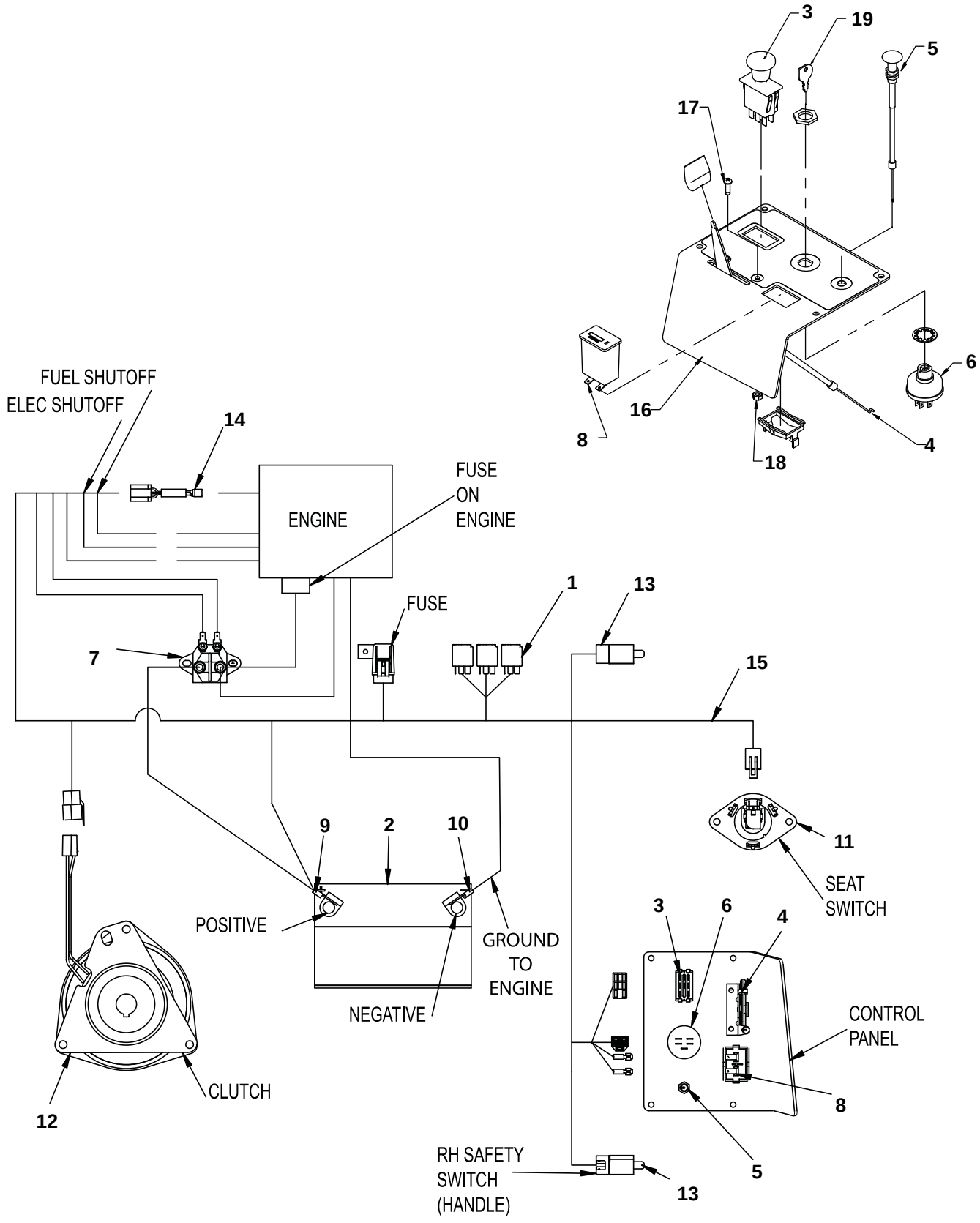


BATTERY

Model 991800, 802

Item	Part No.	Qty.	Description
1	00967340	11	Screw, 10-24 x .625 PAN PHL MAC
2	967152	2	Bolt, 5/16-18 x .750 CR G 5
3	AA968100	2	Rivet, 3/16 x .500 Pop
4	00111910	9	Cable Tie, .15 x 8.50
5	00130923	5	Nut, 10-24 KEPS
6	00130924	3	Clamp, 1/2 Spring Hose
7	00964022	2	Locknut, 3/8-16 Crown
8	960501	2	Nut, 5/16-18 Hex Grade 5
9	00180390	2	Bumper, Rubber .625 x 1.50 DIA
10	AA191200	1	Harness, Power Unit Wire
11	00960702	4	Washer, .375 REG Flat
12	AA960601	2	Washer, .313 MED Spring Lock
13	00960046	2	Bolt, 3/8-16 x 1.00 Hex 5
14	03786959	1	Plate, Top Crossmember
15	00191282	1	Assembly, Fuel Line
16	00181228	1	Band, 15" Rubber Bungee
17	00191216	1	Cabe, Battery - 35" Positive

Model 991800, 802



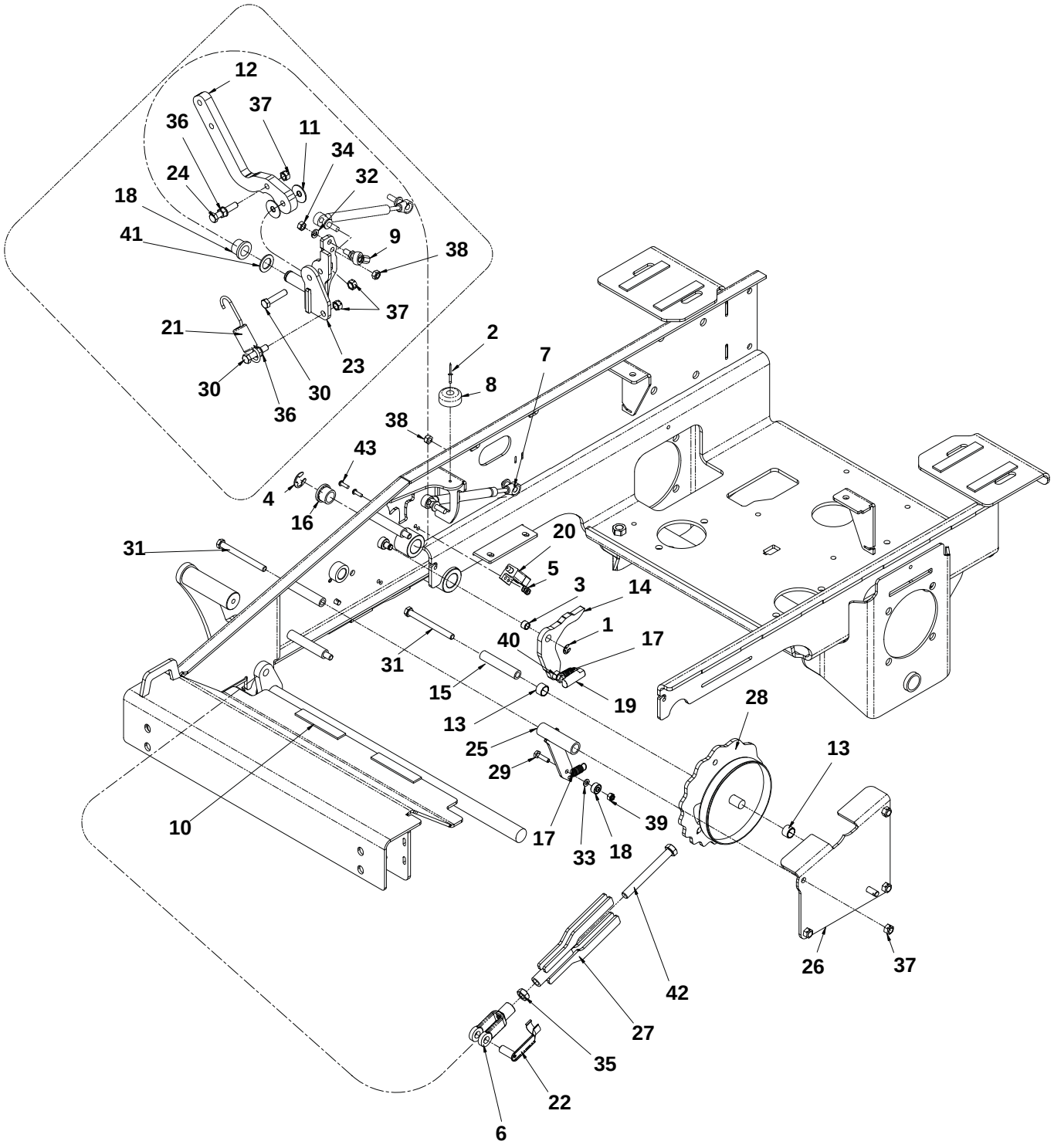
ELECTRICAL SYSTEM

Model 991800, 802

Item	Part No.	Qty.	Description
1	00102770	3	Relay, ISO Mini Electric
2	00191832	1	Battery, 12V - Sealed
3	00136574	1	Switch, PTO Engagement
4	00181816	1	Cable, Throttle
5	00180273	1	Cable, Choke 48”
6	00180620	1	Switch, Key - 3 Position
7	03551000	1	Solenoid
8	00192296	1	Meter, Hour-LCD ALT
9	00180842	1	Cable, 12” Starter
10	00191227	1	Cable, Battery - 35” Ground
11	181074	1	Seat Switch S/O
12	00191109	1	Clutch, Electric - OGURA, GT2.5
13	00191256	2	Switch, Plunger DP - N.O. - N.C.
14	00288200	1	Adapter Harness, Kawasaki
15	AA191200	1	Harness, Wiring
16	00181369	1	Control Panel
17	00967340	4	Screw, Pan Head Phillips #10-24 x 5/8
18	00964028	4	Locknut, 10-24 Center
19	105684	1	Key, Ignition S/O

Mower Deck Lift

Model 991800, 802



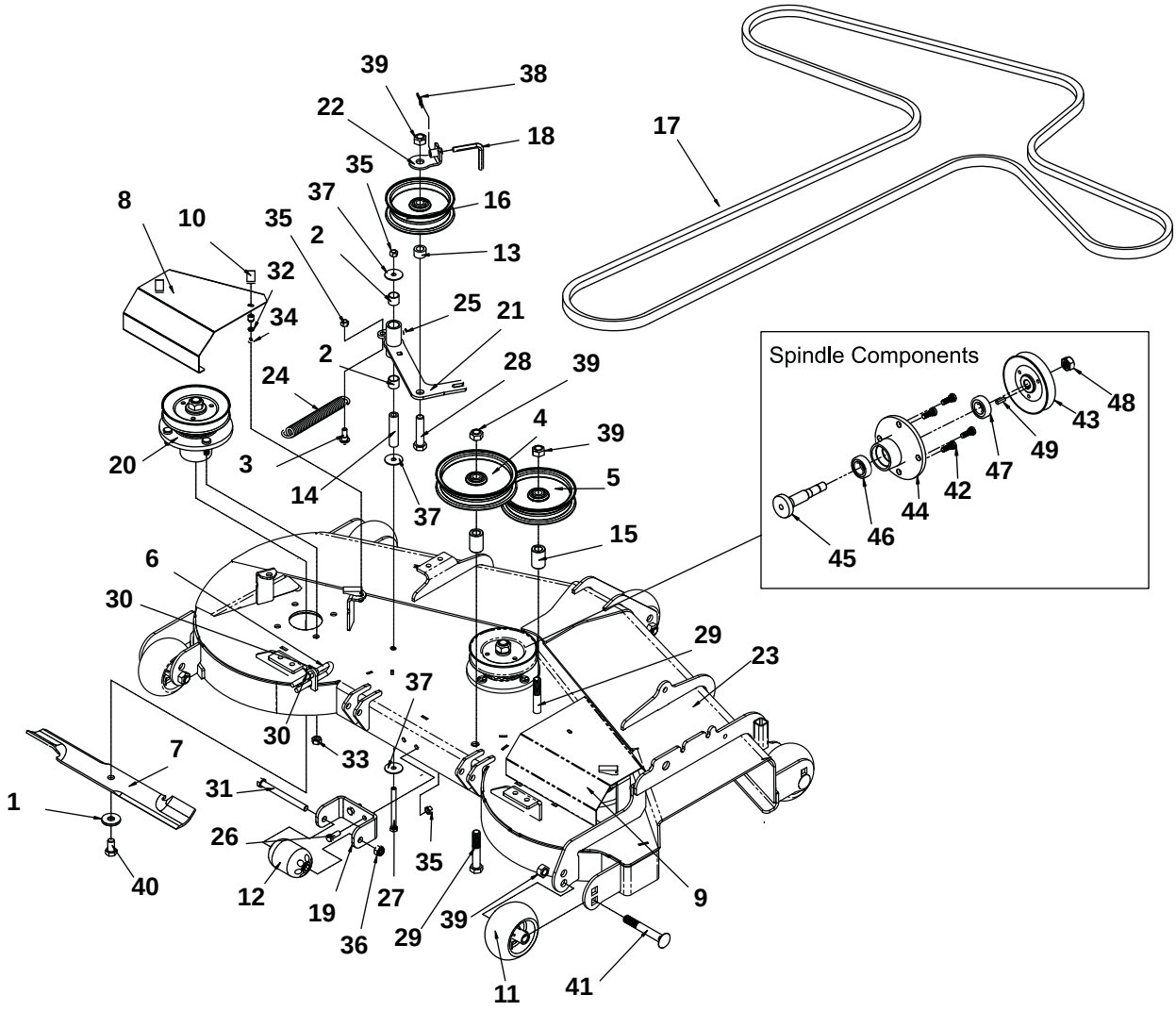
MOWER DECK LIFT

Model 991800, 802

Item	Part No.	Qty.	Description
1	00967358	2	E-Ring, .375 x .035
2	AA968100	2	Rivet, 3/16 x .500 Pop
3	00103380	2	Bearing, Sleeve .377 x .503 x .375
4	00130886	2	E-Ring, .750 x .050
5	00130923	4	Nut, 10-24 KEPS
6	00161897	1	Yoke, Adjuctable 1/2-13
7	00180231	2	Dampener, Steering Control
8	00180390	2	Bumper, Rubber .625 x 1.50 DIA
9	00180606	2	Ball Joint, RH 5/16 FMAL W/STD
10	00180897	6	Foam, .125 x .750 x 4.00
11	00180961	4	Washer, .400 x 1.27 x .062 Nylon
12	00191082	2	Plate, Steering Control
13	00191298	2	Bearing, Sleeve .627 x .752 x .500
14	00191137	2	Plate, Brake Lever
15	00191151	4	Spacer, .63 x .385 x 3.250
16	00191179	4	Bearing, Flange .750 x 1.00 x .750
17	00191183	3	Spring, Extension .500 x .041 x 1.75 SS
18	00191185	1	Bearing, Ball .250 x .688 x 313
19	00191186	2	Ball Joint, 3/8 x 24
20	00191256	2	Switch, Plunger DP - N.O. - N.C.
21	00191261	2	Spring, Extension .980 x .162 x 4.00
22	00191295	1	Pin, Clevis Spring 1/2" Yoke
23	00191510	1	Weldment, LH Steering Control
	00191513	1	Weldment, RH Steering Control
24	00967390	2	Bolt, 3/8-16 x 2.00 HEX 5 FLTD
25	00191527	1	Weldment, HOC Index Arm
26	03785459	1	Weldment, HOC Cover
27	00191532	1	Weldment, HOC Link
28	00191583	1	Weldment, HOC Cam Control 400
29	00960002	1	Bolt, 1/4-20 x 1.00 HEX 5
30	00960049	4	Bolt, 3/8-16 x 1.75 HEX 5
31	00960058	4	Bolt, 3/8-16 x 4.00 HEX 5
32	AA960601	2	Washer, .313 MED Spring Lock
33	00961701	1	Washer, M6 REG Flat
34	00964003	2	Nut, 5/16-24 STD HEX GR5
35	00964011	1	Nut, 1/2-13 Jam GR5
36	00964016	4	Lochnut, 3/8-16 Whiz
37	00964022	10	Locknut, 3/8-16 Crown
38	00964047	4	Locknut, M8-1.25 Crown
39	00964048	1	Locknut, 1/4-20 Nyloc
40	00967054	2	Nut, 3/8-24 STD HEX GR5
41	00967061	2	Bushing, MACH .750 x 1.25 x .075
42	00967189	1	Bolt, 1/2-13 x 4.50 HEX 8
43	00967340	4	Screw, 10-24 x .625 PAN PHL MAC

Mower Deck, Belt, and Idlers

Model 991800, 802



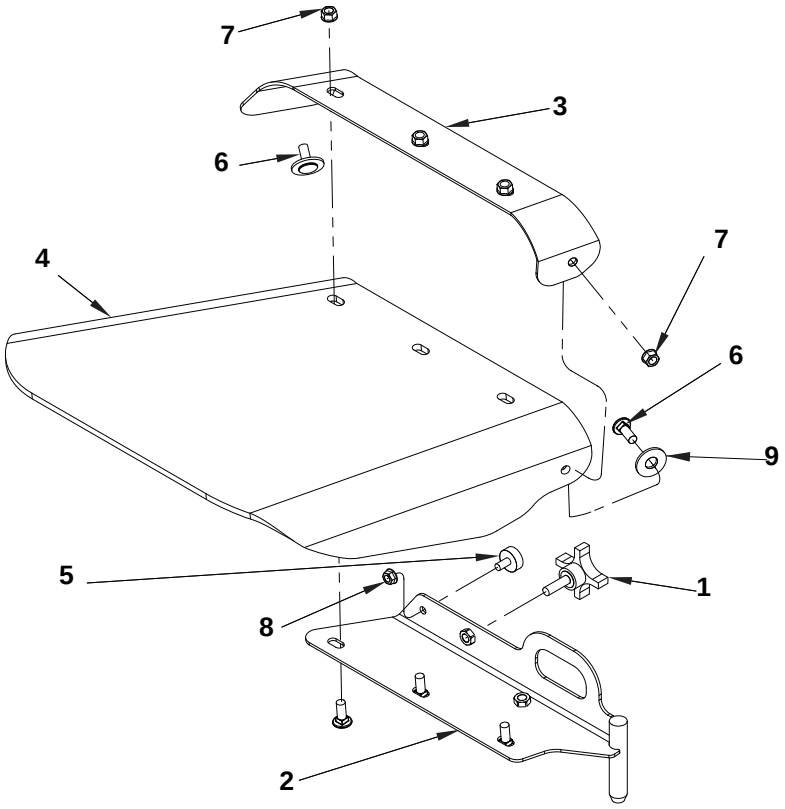
MOWER DECK, BELT, AND IDLERS

Model 991800, 802

Item	Part No.	Qty.	Description
1	00103906	3	Washer, M14 x M40 x M4.5 FLAT
2	00105546	2	Bearing, Sleeve .753 x .878 x .750
3	00135139	3	Bolt, 1/2 x 1.06 x 3/8-16 SLD 5
4	00140280	1	Pulley, Flat 6.00 x .635 w/Bearing
5	00161955	1	Pulley, Flat 5.50 x .635 w/Bearing
6	00181194	1	U-Bolt, Round .63 x 4.50 x 3/8-16
7	00191108	3	Blade, 18.000 LO-Lift - 52" Deck (800)
	00191107	3	Blade, 16.500 LO-Lift - 48" Deck (802)
8	03848859	1	Shield, LH ZTM Belt
9	03848959	1	Shield, RH ZTM Belt
10	00191165	4	Latch, 12-24 SouthCO
11	00191201	5	Wheel, Gauge Ø5.00 x 2.75 SYM
12	00191226	1	Wheel, Gauge Ø2.56 x 3.94 SYM
13	191255	1	Bushing, .688 x 1.13 x .625
14	00191347	1	Tube, .750 x .438 x 3.047
15	00191355	2	Bushing, .688 x 1.13 x 1.68
16	00191374	1	Pulley, Flat 5.00 x .635 w/Bearing
17	00192015	1	Belt, B144K Special - 52" Deck (800)
	00191378	1	Belt, B138K Special - 48" Deck (802)
18	00191837	1	Belt Keeper, 90° w/Hole
19	00191486	1	Bracket, Anti-Scalp
20	AA191500	3	Assembly, Spindle Ball Bearing - 52" Deck (800)
	00191517	3	Assembly, Spindle Ball Bearing - 48" Deck (802)
21	00191533	1	Weldment, Deck Belt Tensioner
22	00191537	1	Weldment, Belt Keeper
23	03847700	1	Weldment, 52Z Deck (800)
	03847900	1	Weldment, 48Z Deck S/O (802)
24	00356473	1	Spring, Extension .910 x .177 x 6.15
25	00959994	1	Fitting, 1/4-28 TPR 45 Grease Zerk
26	00960046	2	Bolt, 3/8-16 x 1.00 Hex 5
27	00960058	1	Bolt, 3/8-16 x 4.00 Hex 5
28	00960160	1	Bolt, 5/8-11 x 2.75 Hex 5
29	00960163	2	Bolt, 5/8-11 x 3.50 Hex 5
30	00960502	2	Nut, 3/8-16 STD Hex GR5
31	00961343	1	Bolt, M12 x 1.75 x 130 Hex 8.8
32	00961701	4	Washer, M6 REG Flat
33	00964005	12	Nut, 7/16-20 HEX GR5
34	00964014	4	Locknut, 12-24 Nyloc
35	00964022	6	Locknut, 3/8-16 Crown
36	00964044	1	Locknut, M12 x 1.75 Nyloc
37	00964502	3	Washer, .375 x 1.50 x .O63 Flat
38	00967356	1	Ring, Rue .625 x .072 x 1.690
39	00967392	8	Locknut, 5/8-11 Crown
40	00967397	3	Bolt, 9/16-12 x 1.00 Hex 8
41	00968088	5	Bolt, 5/8-11 x 4.50 CRG
42	00145561	4	Bolt, 7/16-20 x 1.22 SPC 5
43	00180780	1	Pulley, V-Belt 5.75 x .750 52” (800)
	00144579	1	Pulley, V-Belt 4.50 x .750 48” (802)
44	00191013	1	Spindle, Machined Ball Bearing
45	00191014	1	Shaft, Spindle
46	00149230	1	Bearing, Ball M25 x M52 x M15 6205
47	00103977	1	Bearing, Ball M20 x M52 x M15 6304 (802)
48	00964024	1	Locknut, 3/4-16 Crown
49	00966045	1	Key, .250 X .250 X 1.00 SQ

DISCHARGE CHUTE

Model 991800, 802



Item	Part No.	Qty.	Description
1	03820400	1	Knob, 3/8 x 1.25-4 Prong
2	03844859	1	Weldment, Discharge Shield Bracket
3	03844959	1	Plate, Discharge Shield Support
4	03845300	1	Shield, Rubber Discharge
5	07533600	1	Bumper, Rubber
6	00963020	5	Bolt, 3/8-16 x 1.00 CRG 5
7	00964016	4	Locknut, 3/8-16 Whiz
8	00964019	1	Locknut, 5/16-18 Whiz
9	00960704	2	Washer, .500 Reg. Flat

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